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In THE MUNICIPAL INDEX AND ATLAS (the annual reference volume of data and condensed catalogs published by the American City Magazine Corporation) readers will find statistical material, and articles on a wide variety of municipal and public works subjects, not published in the monthly issues of the magazine.

See pages 19, 20, 91, 93 for notices of catalogs and publications on municipal and civic subjects

For Index to Advertisements see page 110

In Daytona Beach
FLORIDA

Sir Malcolm Campbell's racing car, "Bluebird", on the world's most famous beach, Daytona Beach, Fla.

The roar of a huge racing car, a flash speeds down the hard packed sands of Daytona Beach and another world's record is shattered.

Perfection in detail and precision accuracy are embodied in the construction of this car, built to surpass all previous speed records. So, too, Pittsburgh Water Meters, used by the City of Daytona Beach, have perfection in detail, are constructed from only the finest materials and are machined to the closest limits of accuracy. They are setting new records in performance and long life in water departments throughout the country.

PITTSBURGH EQUITABLE METER CO.
MERCO NORDSTROM VALVE CO.

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New York Columbia Chicago Memphis Kansas City Philadelphia Tulsa Houston Los Angeles Oakland

Our Municipal Notebook

More Revenues from Better Services

THE municipalities of this country require more money than they are now collecting. They have power to tax, but in many instances those who used to be taxpayers have lost the power to pay as well as the inclination. A negative way to meet the deficiency is to curtail expenditures, reduce service. Some cities, on the other hand, have actually increased expenditures temporarily by the purchase of latest equipment and thus reduced costs with actually improved service. The wisdom and desirability of this more constructive method is emphasized by an observation that occurs in the Annual Report of the Municipal Light and Power Department of the city of Pasadena, quoted in a "Forward Steps" article this month: "Due to the rapid strides made in mechanical engineering practices, steam generating equipment has improved so rapidly that machinery and equipment which we considered to be the best obtainable ten or twelve years ago with an operative life of twenty to twenty-five years is now so inefficient that it is considered to be poor practice to operate such machinery."

What is true in the field of power machinery is true in all other fields of equipment. It has been pointed out again and again that there has been no depression in engineering research and machine design. Manufacturers have gone right on improving their products. It is incumbent on responsible officials—mayors, managers and councilmen, as well as department heads—to find out what economies are possible through the purchase and installation of modern equipment in every field.

Skimping on Fire Apparatus

A FIRE chief was showing how his appropriations had been cut during the last few years. "One good fire," he observed, "would wipe out all these savings." On page 15 of the February issue will be found what Clifford Davis, Vice-Mayor and Commissioner of Memphis, has since commented on as "a faithful discussion of a very important and pressing question. It is well written and indicates the necessity of cities preparing for the purchase of additional equipment for reserve and to take care of rapidly depreciating property bought in the early days of motor equipment. The city of Memphis has during the depression bought six pieces of new equipment and proposes to add several pieces during 1935."

"It is quite probable," writes R. M. Dorton, City Manager of Long Beach, Calif., "that the budget covering the next fiscal year, beginning July 1, will provide for the purchase of fire equipment which appears to be necessary."

Says Paul Norton, City Manager of Lexington, Ky., "I have read this article very carefully and endorse same as not only worthy, but highly necessary."

When a Workman Loves His Tools

"IT is the best governor I ever had in my twenty years of operating experience!" wrote Harry Achee, General Superintendent of the Paris, Ky., plant that earned an operating profit of $35,000 the first year.

Mr. Achee was merely referring to an accessory on his latest diesel engine, but unconsciously he was stating a principle on which profits are made: the provision of tools that make the workman enthusiastic.

It may or may not take very long to decide to build a new electric plant . . . or to get voters' approval . . . or arrange for the money . . . or to install the plant. And there is excitement and satisfaction in the creation of this new public property. But once you have it, and the machinery is operating and the lamps are lighted throughout the city and the motors are turning in the factories, you must settle down to keeping the operating force enthusiastic for years and years to come. The novelty is gone, and yours and succeeding administrations will lose interest in the plant, taking it for granted except for the flurry of the annual statement.

But the superintendent of your plant must not lose interest, but must regard that utility as a tool with which he can help to make a living for the town. The next annual statement must always be in his mind, and if he is particularly conscientious he will think in terms of months. Here is his creed: Better service, lower rates, greater consumption, larger profits.

What will make him most successful? The answer is prompt: Providing him with the most efficient equipment, fuel and lubrication. When your plant superintendent can say of his equipment, as Mr. Achee says of his governor, "It beats anything I have ever operated!" then you can afford to forget the utility from time to time, in the comfortable knowledge that it is efficient because the operator is proud of it.

Bell Ringer Plus

TOWN officials who think they are busy might find out how John Cowan of Blythe, Ont., does it. He is sanitary engineer, street inspector, police chief, weed inspector, caretaker of Memorial Hall, liquor law enforcement officer, and clerk of the weigh scales. All this, of course, may sound more titular than real; but, as a final straw, Mr. Cowan must ring the school bell four times a day. However, he receives $600 a year.

Drunken Driving

HOW many of the daily multitudes of drivers contain more or less alcohol is not known; but statistics of the number found out are presented in the Traffic Control section of this issue. Many states have laws against the practice, but convictions are difficult to obtain. In Pennsylvania, for example, a physician's testimony is required, and physicians are loath to testify. Pittsburgh's Better Traffic Committee prescribes careful preparation of such cases, trained and intelligent police, capable and fearless judges, aroused public opinion that spurs juries to convict. Samuel J. Foley, District Attorney of the Bronx, New York City, has suggested that the Legislature change the term "manslaughter" to "reckless operation of a vehicle resulting in death." Thus jurors would not feel that they were trying a murderer, but a dangerous individual whose actions were not premeditated.

At 2 A. M.

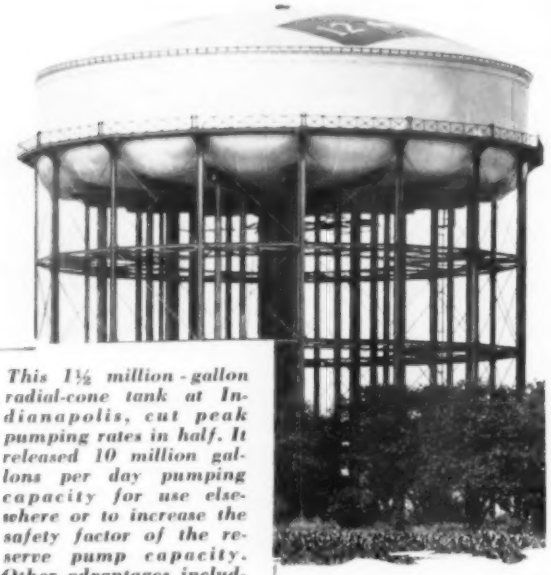
FIRE departments are accustomed to false alarms; but seldom are these turned in for so "worthy" a purpose as four recent ones in Jersey City. The last time it happened, at 2:30 o'clock of a frosty morning, the culprit was apprehended. This man explained that he had taken an examination for fireman two years before and had since been unemployed. He hoped that by overworking the firemen, more would be appointed and he one of them. He had turned in all four alarms from the box nearest his own bed.

Defective Motor Vehicles

LATEST news on compulsory motor-vehicle inspection since Connecticut's interest in it, is the recent decision upholding the operation of the Des Moines Bureau. Pennsylvania has just reported 8,299 defective vehicles out of the 83,724 involved in accidents last year.

Radial-Cone Tanks Offer You ~

1. Adequate Elevated Storage



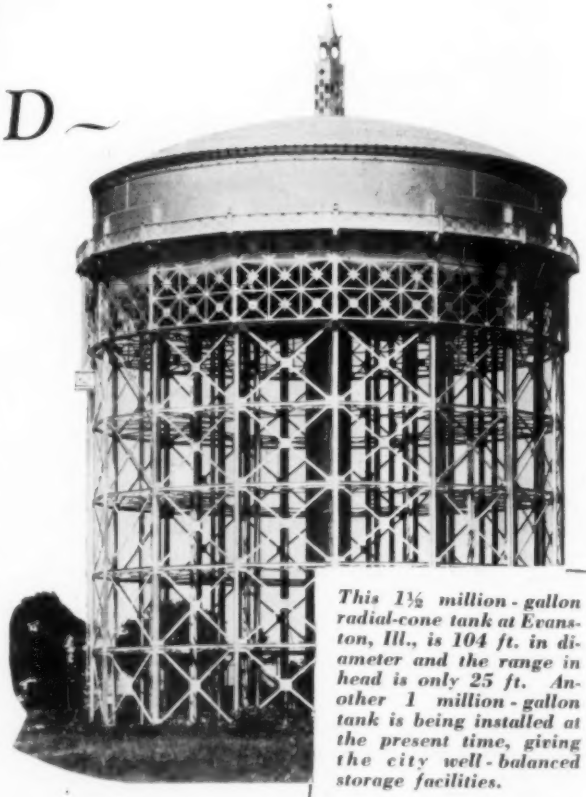
This 1½ million-gallon radial-cone tank at Indianapolis, cut peak pumping rates in half. It released 10 million gallons per day pumping capacity for use elsewhere or to increase the safety factor of the reserve pump capacity. Other advantages included improvement in pressure and additional fire protection.

The radial-cone type of elevated steel tank has made the use of adequate elevated storage much more practicable in water systems where 1,000,000 gallons or more is needed in a single unit. Such storage improves fire protection and provides quantity and pressure where most needed. It may also increase the safety factor of pumping equipment or postpone the installation of additional plant. This design is pleasing in appearance and is structurally sound.

AND ~

2. Shallow Depth Storage

Shallow depth in an elevated tank reduces pumping costs because it decreases the average head against which the pumps must work. It improves pressure in the system because the water level in the tank varies so slightly. It makes possible the delivery of the *entire* capacity at serviceable pressure with a lower over-all height. The radial-cone design is the ideal way to gain these advantages in large water systems for it permits storage of a million gallons in a depth of only 25 feet.



This 1½ million-gallon radial-cone tank at Evanston, Ill., is 104 ft. in diameter and the range in head is only 25 ft. Another 1 million-gallon tank is being installed at the present time, giving the city well-balanced storage facilities.

WE shall be glad to discuss the use of elevated tanks in solving your distribution or operating problems. Our nearest office will also furnish estimating figures on any tank you are considering, without obligation to you.

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New York.....3308-165 Broadway Bldg.
Cleveland.....2236 Rockefeller Bldg.
Detroit.....1501 Lafayette Bldg.
Philadelphia....1616 "1700" Walnut St. Bldg.
Boston.....1501 Consolidated Gas Bldg.
Birmingham.....1502 N. Fiftieth Street
Dallas.....1406 Dallas Athletic Club Bldg.
San Francisco.....1033 Rialto Bldg.
Houston.....2919 Main Street
Tulsa.....1625 Thompson Bldg.
Los Angeles.....1403 Wm. Fox Bldg.

Fabricating plants in CHICAGO, BIRMINGHAM, and GREENVILLE, PA.

Well Water. Hydrant Colors. Adjustments

Well Waters at Las Cruces, N. Mex., and Vicinity

ANALYSIS of Rio Grande waters made in 1930 showed the river to contain total dissolved solids as follows: 10 grains per gallon at Albuquerque, 33 grains at Elephant Butte Lake, 35 grains at Las Cruces, and 45 grains at El Paso. The River has a great deal to do with the level of the water table of the valley, but just what effect it has upon the quality or quantity of the deeper waters is not known.

Water at Las Cruces is encountered at 10 to 15 feet, and the log of a well shows alternating strata of sand and gravel, with thin layers of clay down to a depth of 70 feet, where a 30-foot stratum of fairly open sand and gravel is encountered that will produce up to one million gallons of water per day. The water is quite hard, containing 60 grains per gallon of total solids and 17 grains of calcium and magnesium hardness.

A number of years ago attempts were made to test the water at greater depth. These tests failed to reveal a better quality water, but it cannot be determined from the existing records whether the results were due to improper drilling or to the absence of a better water. It was not until four years ago that it was learned that better water could be obtained in quantities in this vicinity. This better water has been found in three wells which owing to difference in surface elevation are not all of the same depth, but they do go down to the same gravel stratum found from 200 to 230 feet below the surface of the valley.

Waters found in these three wells at the time of drilling showed practically the same chemical analysis of 12 grains per gallon total dissolved solids and 6 grains of hardness. Although several thin strata of clay were encountered in each well, there was no truly impervious stratum to hold out the waters above.

Indication that the water at the 200-foot level is limited is shown by the fact that a well delivering 100 gpm is just as soft today as when drilled four years ago, while another that has been pumped at 250 gpm during the summer months only has increased in hardness from 6 to 8 grains, and the third well, which has been pumped steadily at 200 gpm, has increased in hardness from 6 to 9 grains. It is supposed that this increase in hardness with corresponding increase in total dissolved solids is due to percolation from the waters above.

Evidence that truly soft water exists in some sections of the Rio Grande Valley is again proved by a well recently completed on the Jornada Range Reserve about 20 miles north of Las Cruces and 5 miles east of the river. The well was drilled to a depth of 340 feet through much the same alluvial fill as found in the valley. Water was found at this depth to have 33 grains total solid and 3 grains of calcium-magnesium hardness. The capacity of the pumping equipment is only 40 gpm, so the volume is unknown.

El Paso, 45 miles south of Las Cruces, gets its water supply from six valley wells and two mesa wells, all of which draw their water from 500 to 800 feet below the surface of the valley. Some of these wells produce as much as 2,000,000 gallons per day and all have practically the same chemical analysis, 30 grains per gallon total solid and 7.9 grains of hardness.

—Abstract of a paper by J. J. TURNER, City Manager, Las Cruces, N. Mex., delivered before the Rocky Mountain Section, American Water Works Association.

The Use of Colors for Fire Hydrants

ACCORDING to a discussion by C. W. Mowry, of Boston, at a meeting of the American Water Works Association, the purpose in painting hydrants different colors is not generally understood. In New England the color of the top of the hydrant indicates the supply of water which may be expected from it, while the body of the hydrant may be of one standard color, such as yellow. For example, if the hydrant cannot be expected to give more than 500 gallons per minute, then the cap will bear one color; if it can give from 500 to 1,000 gallons per minute, another color is used on the cap; while if it can be called upon to give more than 1,000 gallons per minute, still a third color is employed. This method of marking has been approved by the New England Fire Chiefs Association as well as the New England Water Works Association.

An esthetic color scheme employed in the Washington Suburban Sanitary District in Maryland is light gray for the barrel and dark green for the top. The gray matches the color of the concrete sidewalks and is not too conspicuous in residential areas, and the green cap blends with the color of the foliage in the neighborhood.

In New York City painting is merely for utilitarian purposes. Black paint is used for the hydrant barrel and aluminum for the dome. The barrels are usually painted every five years and the domes every two years. Members of the Fire Department paint the size of the main to which the hydrant is attached, on the base of each hydrant, to guide the Fire Department. It costs about 30 cents per hydrant, by contract, for painting in New York City. In the theatrical district the hydrants are painted yellow to make them more conspicuous and thus prevent parking of cars alongside.

According to the discussion, those in the North seem to favor the use of chains to prevent the loss of caps when fire departments use the hydrants in snowy weather; also, they feel that the chains would prevent grit from entering the hydrant by means of caps when the caps are laid on the ground and subsequently put back into position on the hydrant. On the other hand, those who do not employ chains report very few lost hydrant caps.

Roger W. Esty, Superintendent at Danvers, Mass., uses yellow for hydrant barrels with good results. Different colors are used in painting the tops of the hydrants to indicate the capacity. Red tops are employed where the supply is poor or where water hammer might result from quick shut-off. Superintendent Esty suggests that the Water Department send a man to each fire to cooperate with the Fire Department in the operation of hydrants.

The New York City Sales Tax

THE newly passed New York City sales tax provides that water is exempt if it is delivered through a pipe. If it is delivered in a paper bag, you are probably out of luck.—*The New York Times.*

Texas River Reverses Flow Over Dam

THE Nueces River, the source of water supply for the city of Corpus Christi, Texas, performed an unusual trick at the close of the old year when it reversed its direction of flow and ran upstream and over the low water dam built to impound water for the city. According to a United Press dispatch, recent heavy rains had brought the river to the flood stage and the river took a short cut through the San Patricio County bottomlands. Water coming from the short cut reached the river again near Texas Highway No. 129 before the water in the main stream and began running upstream and was actually higher below the Calallen Dam than above it.

A New Adjustment Racket

IN a discussion of adjustments of excessive meter bills at a meeting of the American Water Works Association, J. B. Eddy, of Chicago, Ill., let it be known that during the depression there has been a racket going on in Chicago at industrial plants, especially in laundries, where some person representing himself as an inspector entered and broke the seal, reversed the gears and resealed the meter, representing that the Water Department was making an adjustment to the meter. In this case the adjustment fits on the other foot and a back bill is rendered. For some period the Water Department has made recommendations to the collection agency that it collect on these bills.

Where the ordinance allows it, in the ordinary case, Mr. Eddy feels that it is better to make an adjustment, for there are many different things that enter into it, but much depends on the circumstances with which the department is faced in each individual case.

Layne Pumps Win Praise Of City Officials

Rhinelander, Wisconsin Given Pure Water By New System

One of the most modern and efficient Well Water Systems serving American municipalities today, is the system of Layne Pumps and Wells, on which the City of Rhinelander, Wisconsin, relies for its supply.

Practically an unlimited volume of pure water is available to meet all demands.

But, less than five years ago, water to Rhinelander, was a grave problem. The source of supply was the river. Water was highly unsatisfactory. Taxpayers complained of tastes and odors. Pressures were uncertain. An emergency constituted a threat which hung over the city at all times.

Tens of thousands of dollars were spent by city officials and private industries in fruitless attempts to locate an underground supply. Test after test forced them to believe that Rhinelander would be compelled to use the unsatisfactory river water.

Sink Test Holes

Plans were being made to build an elaborate and expensive system, when a representative of Layne-Northwest Company, convinced by preliminary tests that an underground supply was available, volunteered to make complete and final tests.

Test holes were sunk. Analyses of strata formations were made.

Finally, the Layne-Northwest Company, of Milwaukee, Wis., laid before city officials an offer not only to supply the city from an underground source, but to guarantee at least three million gallons of water per day from three wells.

Today, Layne Pumps and Wells supply to the City of Rhinelander not only sufficient water to meet routine demands and emergencies, but assure additional supply great enough to meet the city's demand for years to come.

In the words of Theodore M. Wardell, City Manager, "Even though our requirements and specifications were severe, the installation has met them in every respect, especially in the matter of production."

Demand Easily Met

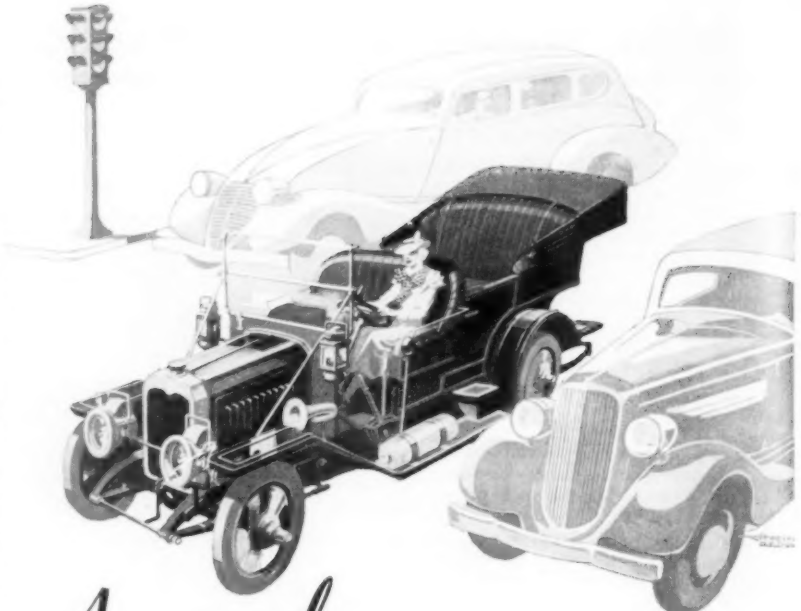
"Our peak demand this year showed a pumpage of 3,432,000 gallons which was easily met."

"We are exceptionally proud of the quality of the water which we believe is unsurpassed any where . . . no odor or turbidity and extremely palatable. We feel we have an almost ideal water supply."

Rhinelander's water is drawn from three Layne Gravel Wall Wells by Layne Vertical Centrifugal Pumps built in the factories of Layne & Bowler, Incorporated.

The story of Rhinelander is one of many similar stories that fill the files of the world's largest and oldest water developing organization.

Layne service is available through seventeen affiliate companies of Layne & Bowler, Incorporated.



As good as NEW

Imagine trying to drive any 1905 model automobile—even if it were "as good as new"—in 1935 traffic.

Or imagine any modern municipality or industry relying for its water supply on equipment that is hopelessly out-dated.

Yet statistics show that approximately one out of every four municipal and industrial water supply systems in service today is obsolete.

Obsolete equipment in service usually represents false economy.

Check your water costs. Then compare them with the cost of water that modern Layne Pumps and Well Water Systems deliver to thousands of towns, cities, and industries the world over.

Let Layne tell you how Layne Pumps and Well Water Systems can cut your water supply costs.

Whatever your water needs are, write today for interesting free bulletins that are packed with facts about Layne Pumps, Wells and Water Systems.

● *These interesting free bulletins which tell how Layne Water Supply Systems can cut your water costs, sent free on request. Use the coupon. . . .*

Think:

OBSOLETE EQUIPMENT COSTS 30% MORE TO OPERATE

LAYNE PUMPS

AND WELL WATER SYSTEMS

LAYNE & BOWLER, Incorporated,
Department B, General Offices, Memphis, Tennessee.

Please send me free your latest bulletins on Layne Pumps, Wells and Well Water Systems.

Name _____

Address _____

Sewers—Financing. Maintenance. Explosions

New Legislation Aids Cities in Financing Sewage Treatment

THE financing of sewage treatment works has been definitely curtailed in several states by the enactment of laws limiting the debt-incurring and taxing capacities of municipalities. This has led to the necessity of finding new methods of financing much-needed improvements and has been instrumental in the adoption of sewer-revenue-bond and sewer-service-charge legislation. At least seven states enacted laws of this type during 1933, and thirty-five states now have laws permitting the collection of charges for sewer service.

Several hundred cities in the United States now have sewer-service charges, there being over 200 in Texas, where sewerage systems were originally operated as privately owned utilities, approximately 25 each in Ohio and Pennsylvania, and smaller numbers in other states, where, however, the number is continually growing.

Experience with the collection of sewer-service charges has been more favorable than anticipated. Information recently given out at Dayton, Ohio, which is one of the largest cities having sewer-service charges, is that with 48,500 accounts less than one-half of 1 per cent are delinquent. This is an unusual record for any utility service during a depression period.

In many of the states having sewer-revenue-bond laws, it has been judicially determined that the bonds are not a lien on the borrowing capacity of the cities. In others, this matter has not yet been adjudicated, and until that is done, bond houses are usually loathe to purchase the securities unless the city has sufficient additional bonding capacity to include this issue within the limit set by statute.

—From a paper presented by L. R. Howson, of Alvord, Burdick & Howson, Engineers, Chicago, Ill., before the International Association of Public Works Officials.

Combustibles in Manholes in Boston, Mass.

THE report of the 1933 investigations carried on by the U. S. Bureau of Mines, the Edison Electric Illuminating Co. of Boston, and the Boston Consolidated Gas Co., has recently been released. These studies have been carried on continuously since 1929 and consist of sampling manhole atmospheres and shipping samples to Pittsburgh for analysis. Of the 9,482 manholes tested in 1933, 149, or 1.6 per cent, showed combustibles or a deficiency in oxygen some time during the year. The gas concentration in 123 tests was 25 per cent of the lower explosive limit, in 40 it was 50 per cent of the lower explosive limit, in 7 it was 75 per cent, in 12 the atmospheres were explosive, and in 8 the atmospheres were above the upper explosive limit. In three tests there was a deficiency of oxygen and no appreciable quantity of combustible; that is, the atmospheres could not be made to form explosive mixtures either by the addition of combustible propane gas or by the addition of air to the atmosphere.

The report calls attention to the significance of the steady decrease in the percentage of manholes containing combustibles since the beginning of the survey. In 1929-30, 6.1 per cent of the manholes contained combustibles; in 1931, 2.7; in 1932, 1.9; and in 1933, 1.6. Results in 1933 were only slightly better than those in 1932; it appears that a limit is being reached beyond which conditions for this particular district cannot be improved. The number of tests showing combustibles followed the same trend. In the 1929-30 survey 4.8 per cent of the tests contained combustibles; in 1931, 2.9 per cent; in 1932, 1.7 per cent; and in 1933, 1.6 per cent.

Of the 12,291 tests on manholes of the Edison Electric Illuminating Co., about 85 per cent were made in Boston, a higher percentage than in previous surveys because experience has shown that hazards due to combustibles are greater in congested areas than in outlying districts. As a direct result of the cooperative tests in Edison manholes, 151 repairs of leaks were made by the Boston Consolidated Gas Co., and tests in manholes of the New England Telephone and Telegraph Co. resulted in 164 repairs, making 315 in all.

Sewer Maintenance Service —Regular and Emergency

MUCH has been said about operation and the cost thereof, but what about "the service" that is received and paid for by the taxpayer but concerning which he knows little? To the ordinary individual, sewers are out of sight and therefore out of mind, until a stoppage occurs; then he becomes panicky, fearing typhoid fever, and calls for immediate service from the Sewer Maintenance Division. Strict vigilance to keep foreign substances out of sewers would save every one trouble and money.

Thoughtless people do not hesitate to dispose of almost everything in the sewers—a dead dog, hedge clippings, rakings from the lawn, wine mash, garbage, or even new-born babies. A commonly used commodity is widely advertised as easily disposed of in the sewer, but sewer maintenance employees know differently. This thoughtlessness and indifference in Akron, Ohio, means annually: 387 complaints of main sewer stoppages, and 312 catch-basins or street inlet stoppages, all over and above the regular routine maintenance operation of 672 miles of sewers ranging in size from 6 inches to 132 inches, 4 sewage pump or lift stations, 34 interceptor inlets which divert the dry-weather sanitary flow to the sewage disposal or treatment plant, 7,000 inlets or catch-basins that require constant patroling and cleaning.

Besides routine work, during the average year:

Thirty-seven manhole covers bounce off and special trips must be made to replace them.

Eighteen complaints of loose covers require gaskets to eliminate the rattle.

Thirty-seven broken inlets or manhole covers are repaired.

Eighty-four bad-odor complaints rectified by installing flap-gates.

Twenty-two culverts or drains opened.

Numerous sewer gas, natural gas, down-spout complaints are answered and disposed of in one way or another.

Because the equipment is at hand, the city of Akron provides a "lateral flushing" service to the taxpayers, revenue of which does not cover the cost; that is, a lateral is flushed from the cellar drain; and if opened, a charge of $5.00 is made; if not opened, there is no charge. An average of 385 laterals are flushed yearly, successfully opening 65 per cent.

A city ordinance requires that the Sewer Department make all repairs to private laterals; if repairing is done in the street, the cost is paid by the beneficiary. Total receipts from both sources, flushing and repairing, average $3,550, but the year 1934 shows an increase of over $2,000. The cost of this work is taken from the Sewer Maintenance funds, but receipts are credited to the General City funds. All this private work is sandwiched in with the regular duties and, in addition, 24-hour service is maintained.

Twenty-five men, with four to thirty years' experience, make up the maintenance force, which is an all-time low "dry-weather" organization. During storms, and without increasing the organization, five trouble trucks are equipped, representing a cost of $800 for each truck, to handle flooding calls and to answer as many as 50 calls and give relief, in one day. Akron comprises 54 square miles, with several districts from 4 to 6 miles from the operating base. Most large cities have more than one operating base, necessarily at a greater cost in overhead. All required machine, carpenter, electrical and blacksmith work is handled by experienced mechanics within the organization whose regular duty is on sewers.

No full-time night crew is maintained, but calls are received by telephone and only main sewer and emergency work is taken care of by organizing a special crew, paid for time worked only. As many as 52 night calls have been received during storm periods and have been handled as fast as humanly possible. Unnecessary calls, and calls that can wait for business hours, are discouraged. They average about two each night.

Previous to 1934, one man was paid 40 cents a day extra wage to stand by for night calls, which means stay at home every night. This year it was done "for the good of the service," with no cost to the city except telephone service.

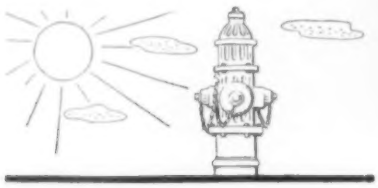
G. J. Hoerbelt,
Sewer Maintenance Engineer, Akron, Ohio.

HYDRANTS HEAVE!

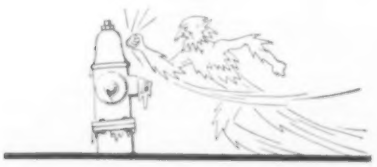
WATER DEPARTMENTS "CUSS." NEED MATHEWS

Water works men take their daily grief with remarkable calm and go right out to do something about it. But when hydrants go bad, they "cuss"—and they're entitled to. The right hydrant properly set should almost never fail.

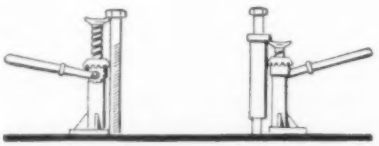
Most troubles start when the wrong hydrant is bought. Because too many people think hydrants are just oversized spigots, we mention a recent accident to one of those fire-protective necessities. The moral, told ahead of time, is "buy carefully."



Here's a case from last winter's sub-zero spell in Hazleton, Pa. D. J. McGeehin, superintendent, reports "There was another peculiar case; a fire hydrant lateral was broken when a paved sidewalk in which it was set heaved, and pulled up the barrel of the hydrant with it." ('34 Jl. Pa. W.W. Assn.)



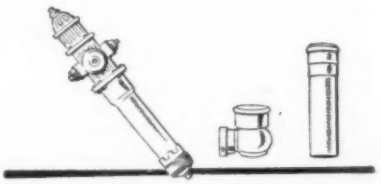
Mr. McGeehin's case is important and probably costly, but we don't think it's unusual. It happens often where heavy frosts, clayey ground, and unprotected hydrants exist. It shows why hydrants must be far more than just "spigots." Look:



If you put a heavy jack under the head of a cast iron bolt, and step down on it, you could snap it in two or pull it out. Frost does the same thing to hydrant barrels. But if you slip a sleeve around that bolt, you could jack away to your heart's content.

That's how a Mathews Hydrant works. Its barrel screws firmly into the elbow, but around that barrel is a loose iron case. When frost grabs, it grabs the protection case. When it heaves, it puts the hydrant under no strain. If you saved one digging and repaving job through having this Mathews protection case, you'd make a big saving.

But besides that, you always have your Mathews working parts available for inspection or repair, and if smashed by a truck, you can fix it instantly with no digging.



Install Mathews. Their cost is normal and you can practically forget upkeep. Besides which, you'll always be ready for fire, *and that's why you have hydrants.* Write for information.

MATHEWS HYDRANTS

and "SAND-SPUN" PIPE, a superior grade, centrifugally cast in sand moulds.

SOLD BY
ESTABLISHED 1803 **R. D. WOOD CO.** 400 CHESTNUT ST.
PHILADELPHIA

Streets and Highways—Public Works

Abutters on Highway Donated Land

IN widening a thoroughfare connecting with main state highways, abutters in Asheville, N. C., were persuaded in all but one instance to contribute the necessary land and building space. One property owner not only refused to donate land, but demanded a $3,800 damage payment. Unable to borrow funds, the City Manager got the local Real Estate Board to appoint a committee which persuaded the other abutters and property owners in the benefited area to contribute the funds required. The moving-back of buildings was accomplished with CWA and ERA labor and materials. The street and sidewalks were paved by the State Highway Department with PWA funds. In this way the entire street-widening project was accomplished with only a nominal cost to the city.

R. L. MAYNARD,
City Engineer.

Methods of Bituminous Street Repair in Los Angeles

THE repair and reconstruction of pavements is in charge of one of the superintendents of the Street Maintenance Division of the Bureau of Engineering. The work on asphalt and other types of bituminous pavements is handled as follows:

1. By the surface-heater process, whereby the old surface is heated and removed to allow the application of 1½ inches of new surface mixture to a uniform grade. This method also insures a perfect bond between the old and the new surfaces.

2. By the cover process, in which the old surface is cleaned and liquid asphalt applied as a bond, after which the new surface is applied in such a manner as to eliminate inequalities, and then rolled. Only a small amount of this work has been done since the September, 1933, layoff. In some cases it is necessary to raise the manholes to meet the new grade, and for this purpose a ring has been developed by this Division, which meets all requirements, at a cost of $2.25. This effects a saving of approximately $18 over the old method of rebuilding.

3. By removing old material and repairing with new where failure has occurred.

4. By the planer process. Where a corrugated condition exists, the surface is planed smooth.

5. By pouring cracks in pavements with liquid asphalt, three crews being employed.

The areas resurfaced and costs for the fiscal year 1933-1934 are as follows:

	Sq. Feet	Cost Per Sq. Foot
Surface heater process.....	310,211	$0.054
Patched process	77,719	0.180
Cover process	146,006	0.052

The city-owned and operated asphalt plant has supplied all asphalt mixture and oiled gravel used since September, 1933. A new dryer was installed which increased the daily output approximately 25 per cent.

LLOYD ALDRICH,
City Engineer.

Cost of Township Road Repairs

DURING 1934 surface treatment was applied to 65,282.6 square yards of highways in Upper Darby Township, Pa. In this work 20,370 gallons of asphalt were used, an average of 0.312-gallon per square yard; and 1,129.91 tons of ½-inch crushed trap rock, an average of 34.6 pounds per square yard. This low average was made possible through the treatment applied to 11,548 square yards on a street which was paved with bituminous concrete and which needed only a very light application as a seal coat.

The average cost of materials used in the surface treatment program was $0.0492 per square yard, and the labor cost $0.015 per square yard, which was the same as in 1933.

In preparing the patching material in the Highway Department's mixing plant 760 tons of ½-inch limestone were used and 7,100 gallons of emplsified asphalt. The cost of the material in the finished product was $2.70 per ton. In addition to the patching material prepared in the mixing plant, 384 tons of pre-mixed bituminous concrete was purchased at $4.20 per ton.

During 1934, 200 gallons of bituminous crackfiller was used to fill expansion joints in concrete roads.

SAMUEL H. WALKER,
Chairman, Highway Committee.

Where Bond Issue Money Goes

PROPORTIONATE CAPITAL EXPENDITURES OF MUNICIPALITIES OF THE UNITED STATES, BY DISTRICTS, FOR THE YEARS 1921 TO 1933, AS INDICATED BY MUNICIPAL BOND SALES

District	Water	Roads Streets and Bridges	Sewers and Drainage	School and School Buildings	General Buildings and Fire	Parks and Museums	Total
I.....	17.02	37.50	7.29	27.45	8.60	2.14	100.0
II.....	11.61	45.78	13.62	19.70	5.26	4.03	100.0
III.....	15.68	48.30	9.20	19.35	6.70	.77	100.0
IV.....	14.82	44.14	9.22	23.22	7.37	1.23	100.0
V.....	16.09	30.47	7.65	36.56	8.71	.52	100.0
VI.....	24.47	25.31	12.38	30.07	6.57	1.20	100.0
Average for United States..	14.75	38.32	10.61	24.60	7.95	3.77	100.0

From "Criteria and Planning for Public Works," a research report of the National Resources Board, prepared by Russell V. Black, Research Consultant.

Water Mains or Sewers Might Cause This

Photograph by courtesy of New York Sun

A SERIOUS TRAFFIC HAZARD CAUSED BY HEAVY RAINS WASHING OUT THE GROUND BENEATH THE PAVEMENT AND ESCAPING THROUGH THE SEWER

When a woman and three children were driving along West 148th Street, New York City, the pavement suddenly collapsed under the front wheels of the car. The depth of the hole was about 6 feet, but the car caught on the edge of the cave-in and the occupants climbed out unhurt

Vanderheyden Reservoir, part of the water supply system of the City of Troy, N. Y.

The City of Troy O.K.'s Mathieson Chlorine

Chlorination house where Mathieson Liquid Chlorine stands guard over "The Collar City's" water supply.

An Interview with W. F. Luby, Engineer, Bureau of Water

W. F. Luby

"WE have been using your liquid chlorine in our plant for a number of years," says W. F. Luby, "and have found your product very satisfactory, especially your clean cylinders, which save us time and money in the care and upkeep of our equipment."

What Mr. Luby says about Mathieson Chlorine is significant. For quality of product, in the case of liquid chlorine, is largely a matter of scrupulously clean cylinders equipped with dependable, trouble-free valves.

Experienced water works men like Mr. Luby know the danger of any interruption in chlorinating operations, and they appreciate trouble-free chlorine equipment. That is why they specify Mathieson Liquid Chlorine—in the special gray cylinders for water purification use.

The MATHIESON ALKALI WORKS (Inc.)

60 East 42nd Street **New York, N. Y.**

Soda Ash . . . Liquid Chlorine . . . Bicarbonate of Soda . . . HTH and HTH-15 . . . Caustic Soda . . . Bleaching Powder Ammonia, Anhydrous and Aqua . . . PH-Plus (Fused Alkali) . . . Solid Carbon Dioxide.

Street Cleaning—Snow Removal—Refuse Disposal

Reasons Why States Do Not Plow Snow from Village Streets

NEWSPAPER reporters and others have frequently asked the question, "Why doesn't the State Highway Department give the same snow-plowing service on village streets used for trunk routes as on the routes outside municipalities?" The answer given by the Minnesota Highway Department is typical of the replies given by practically every state in the snow belt. The departments are usually willing to give the same service, but this has proved unacceptable to most municipalities. Snow-plowing operations of state highway departments are confined to pushing the snow off the roadway to the sides. In a municipality this means piling up snow against the curbs and eliminating parking space. This is not desired by the local merchants, and as a result most small towns have asked the departments not to plow within the village limits, preferring to let traffic pack the snow down, or to remove it themselves.

CLEANING THE SIDEWALKS OF EVANSTON, ILL.

Two 21-hp McCormick-Deering tractors with 6-foot snow-plows handled the recent 11-inch snowfall so effectively that two more units have been added

Relief-Roll Employees for Snow Removal

IT was good news to cities throughout the country when the Federal Emergency Relief Administration notified State Emergency Relief Administrations that men on relief rolls might be used for snow-removal projects in all communities where there was need for such labor. This action gave work to thousands of men who are in urgent need of help, and at the same time it aided materially in keeping streets and sidewalks open for traffic in many communities where street-cleaning departments were financially unable to cope with the storm.

Street Cleaning in a Suburban Community

MUCH has been written of the street-cleaning problems in the large city, but they are equally important in the smaller high-class suburban communities which surround the large cities. Street cleaning is one of the major problems of the Highway Department of Upper Darby Township, Pa. Operation of the Elgin pick-up sweeper two shifts daily, beginning at 2 A.M., was continued throughout 1934. The operation of the sweeper before daylight has not been entirely satisfactory, since in the summer months many automobiles are parked in the street all night. A survey made at 4 A.M. one morning in July showed 31 cars parked in one block, and every dwelling on this street had an attached garage. Furthermore, low-hanging limbs of street trees are a source of danger to the operator before daylight. On several occasions the equipment has been damaged and the operator injured from this source. In December the sweeper was shut down for three weeks for complete overhauling. During this period an effort was made to keep the streets clean by hand-brooming, particularly in the business sections.

A special slatted truck body was constructed for one of the highway trucks, to aid in removing fallen leaves. During October and November the monthly quantity of material picked up by the sweeper is several times the normal amount, owing to fallen leaves.

During January and February, 1934, the amount of snow to be removed was exceedingly heavy. In spite of assistance from the State Highway Department, it sometimes required two days for the two township plows to open the 135 miles of roads in the township. On several occasions the plows worked 36 hours continuously.

SAMUEL H. WALKER,
Chairman, Highway Committee, Upper Darby Township, Pa.

ONE OF THE TWO AUSTIN MOTOR STREET SWEEPERS WHICH TRAVELED A TOTAL OF 13,400 MILES IN CLEANING THE STREETS OF ST. LOUIS, MO., IN 1934

Knew His Garbage

Lawyer: Can you tell me if the defendant was expensively garbed?

Rastus: She sure was, suh. Ah knows expensive garbage when I sees it.

Begin Now to Build Up Your Fire Alarm Box Distribution

EVERY city should follow a planned annual program for maintaining adequate fire alarm box distribution by purchasing a definite number of fire alarm boxes each year.

To accomplish this, every fire chief should first make a survey of his existing system by plotting out the locations of his present boxes on a map of his city and also marking those locations where additional boxes are urgently needed. A check up on all obsolete boxes should also be made and then a definite plan laid down to replace a certain number of such boxes each year and add a few new ones so that at the end of a ten year period, the entire system will contain an adequate number of boxes on the streets—all of a modern type.

After your needs have been determined in this manner, you should put a figure in your budget large enough to take care of the purchase and installation of these boxes. Many cities have suffered during the past few years because of reduced appropriations; but, now with business picking up and tax collections improving, you should lay definite plans to start building up your fire alarm box distribution again on a planned basis, so that the efficiency of your fire department will not become too seriously impaired.

We have an interesting booklet "Planning Fire Alarm Box Distribution for Fifty Years," that should be a real aid to you in planning your fire alarm requirements. A copy will be sent to you on request.

THE GAMEWELL COMPANY

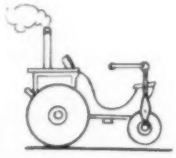
NEWTON, MASSACHUSETTS

"A Box A Block"

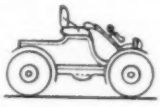
Avoid Conflagrations by Having Modern Equipment

"THERE was little attempt to revise the design of any fire apparatus in changing over to automobile equipment," wrote a man prominent in the fire-prevention industry. "The hose body, including the chemical engine, from the horse-drawn wagon was merely transferred to an automobile."

How prevalent is this belief, and does it explain to some extent, in addition to reasons of economy, the considerable volume of "home-made" assembly construction in this field?



The manufacturers say that the opening statement is ridiculous and that it "would give the average person the idea that fire-engine manufacturers have been asleep for the last twenty years and that no notable improvements have been made in fire apparatus during that period. This positively is not the case."



There is considerably more activity in the fire-department field than is visible on the surface. This activity is of three kinds. The first is mental and consists of an official consciousness that all may not be right in the fire department, and that a single severe fire might wipe out many times the savings in fire department operation that seemed so necessary. There may be men enough and they may be adequately paid; but how about the equipment they are using? How many new pieces of apparatus have been purchased since 1929? How old are the apparatus and hose on which, efficiently operated, the safety of the town depends? Is the fire-alarm system, if any, one of the many that are rated poor or very poor by the National Board of Fire Underwriters? Such are the ratings in more than a third of the 700 communities (out of thousands) that have such a system at all. How complete is the service? How many boxes are there, and how many ought there to be? However good all this equipment once seemed to be, how much better is the equipment that is available today? These are some of the questions that are troubling conscientious administrative officials.

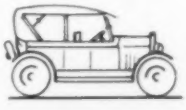
It is true that fire losses have apparently dropped in the last four years. But there still are fires and the conditions that make for fires. When a man's home or business establishment burns down, he feels no particular satisfaction in the possible fact that the fire insurance companies, generally, paid out 20 per cent less in losses for the year than they did the preceding year. Furthermore, it is questioned if the apparent reduction in losses is due to better preventive measures or to lower property values, smaller inventories, and decreased insurance premium receipts out of which the losses are paid and which form the statistical basis of fire losses.

The fact remains that individual fires are as destructive as ever they were,—witness the Kern Hotel fire at Lansing,—and that the department must be prepared to fight such fires, though they occur only once in a year or ten years. The alarm system, the apparatus, the hose, and the men and the command, must all be geared, organized and maintained to meet efficiently this unpredictable demand. Each fire is like an exacting play in which the actors must engage and which they must put across without ever having seen the lines before. Their reputations and livelihood depend on sound performance in action, and on no other basis.

The fire departments know this, and the knowledge may account for the second activity in this field. Denied by harassed administrative officials and by taxpayers the equipment they know they must have in order to render an economic account of themselves when the test comes, some of them are building their own apparatus. In various parts of the country this local rehabilitation is known to be going on.

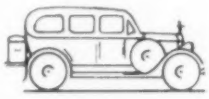
"We bought an old chassis for $15, and we built some ladders and mounted a pump on it. It cost us $600. The manufacturers wanted $6,000."

On the face of it this sounds like real economy—but those who have had sad experiences with second-hand cars bought at bargain prices will hesitate to accept such a statement without reservations. Even after extensive replacement and repairs, the second-hand "bargain" often retains its "junky" character. If this is true of pleasure cars, how much more so with fire department equipment.

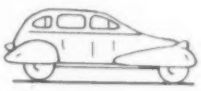


The third activity consists in the actual purchase of new standard equipment, as illustrated by Commissioner Clifford Davis: "The city of Memphis has during the depression bought six pieces of new equipment and proposes to add several pieces during 1935."

The evolution of the fire truck and of the equipment on it has been the evolution of the automotive, power and rubber-products industries. When motor pumping engines were first introduced, a pumping engine having a capacity of 750 gallons per minute required a large, heavy-duty, slow-speed engine to drive it. Today this volume of water can be pumped by a pumping unit one-third the size of the old one and an engine half the size.



Those old-time machines, last word though they looked, were of another age. Top speed was 30 to 35 miles per hour; the big engine was sluggish; the brakes were weak; the steering mechanism, to quote a prominent manufacturer, "was terrible, but it did compare favorably with the passenger cars and commercial trucks at that time."



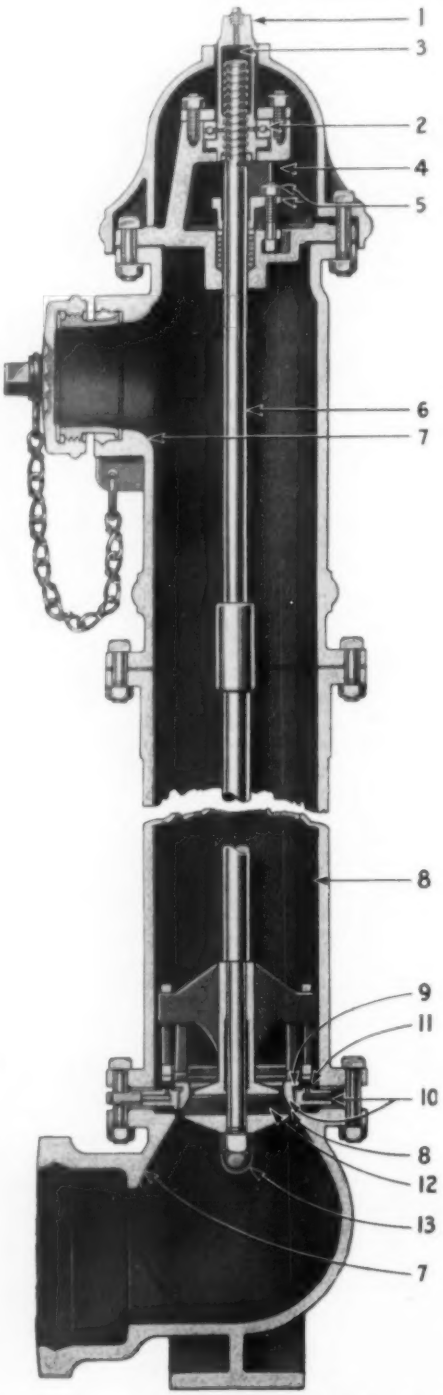
What is available today? The answer is, a mobile power plant that not only far exceeds Underwriters' requirements, but a vehicle whose road performance approximates that of a modern passenger car as well. These machines have a rapid acceleration; top speed exceeds a mile a minute. They are equipped with four-wheel brakes power-actuated; steer as easily as a coupé; ride on the latest type balloon tires, and in dependability and efficiency they outclass apparatus manufactured only ten years ago.

This evolution has been symmetrical and expensive. The best products, as of date, are not mere first-class motor vehicles; they are motor vehicles par excellence de luxe plus a water-works pumping station and flexible mains, each item and the ensemble of the best materials and workmanship. "A higher quality of engineering and manufacturing skill," wrote J. P. Fairbank in the *Journal* of the Society of Automotive Engineers in July, 1931, "backed by many years of experience enabled that development, but the problems have been relatively simple because the essential variables were few. The outstanding requirements have been dependability and capacity."

THE

WESTERN

FIRE HYDRANT



. . . has those worthwhile features which make it a standard of comparison as to SAFETY, MAINTENANCE, and SERVICE.

(1) **Operating Spool (Bronze)**—not detachable; eliminates any possibility of the hydrant being rendered inoperative.

(2) **Ball Thrust Bearing**—insures positive and easy operation of the hydrant at all times.

(3) **Lubrication**—provision is made for thorough greasing of threads, operating spool and ball thrust bearing through the operating spool.

(4) **Dry Bonnet Chamber**—operating unit is removed from water zone; eliminates any possibility of corrosion or freezing.

(5), (6), (10), (13)—**Bronze Working Parts**—the bronze construction of the gland and gland nuts, stem, seat rings, and acorn stem nut prevents corrosion.

(7) **Streamlining of Openings**—the streamlining of nozzles and the valve entrance chamber reduces friction loss through the hydrant to a minimum.

(8) **Large Diameter Standpipe and Ample Valve Opening**—together with streamlining this feature assures a maximum water flow and a minimum of friction loss.

(9) **Heavy Solid Seat Ring Gasket**—no tendency to tear or curl; makes possible easy installation in field.

(10) **Seat Rings**—bronze construction of both seat rings assures the easy removal of the removable seat ring in case of repairs.

(11) **Positive Drainage**—nine drain openings are provided around the periphery of the stationary seat ring to insure rapid and positive drainage. The bronze construction of the stationary seat ring prevents any corrosion around the drain openings.

(12) **Compression Type Valve**—prevents flooding in case hydrant is broken. The valve can be readily removed for inspection or repair without the necessity of digging up the hydrant.

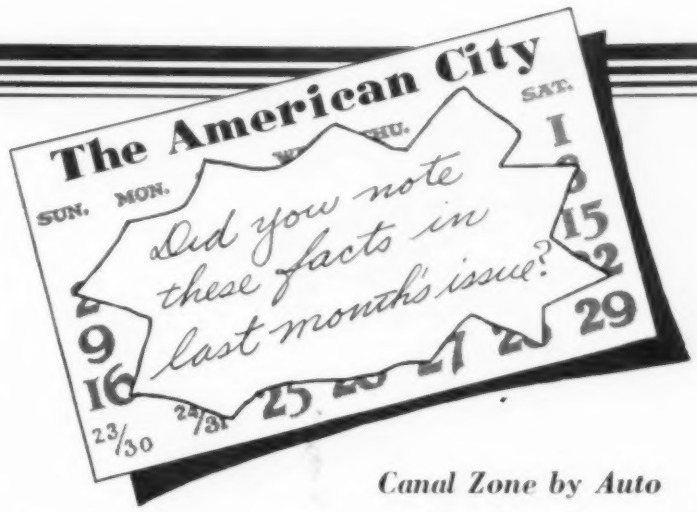
Bulletin No. 307 fully describes this modern hydrant. Write for your copy today.

THE WESTERN GAS CONSTRUCTION

division of

THE KOPPERS CONSTRUCTION COMPANY

FORT WAYNE, INDIANA



Career Service

"The false idea that charity begins on the public payroll" and nine other fallacies that turn many good men away from government employment are discussed on page 81, February.

Police

Use of amplifiers to direct pedestrian traffic in Detroit is described by Edward A. Mitte. In Canton, Ohio, Commissioner of Traffic G. H. Muehleisen stresses the value of the motorcycle. Page 67, February.

The City's Streets

A city has the right to tax public utilities for use of streets without local franchise, according to a U. S. District Court decision in favor of the city of Portland, Ore. Numerous other decisions of interest to municipalities are on page 89, February.

Scenic Highway

Skyline Boulevard in Reading, five miles long and compared with "the famous Rim of the World Drive in California," is dedicated to the unemployed who have almost completed it. The surface is asphalt penetration macadam. Page 51, February.

Traffic Survey Manual

The modus operandi for making a traffic survey is outlined on page 77, together with information on where to obtain the detailed instructions. An authoritative discussion of traffic signs and signals, begun on page 65 of the January issue, is continued on page 79 of February.

Paris, Ky., Plant

After endeavoring for twenty years to obtain lower rates by argument, the city of Paris, Ky., built itself a diesel-engine plant that has earned an operating profit of $34,670 in the first year of service. Capacity is 1,462 kw. Residential lighting rate is $1 for first 12 kwh, and 7 cents for the next 18 kwh. Page 64, February.

Newark's Centrally Located Radio

Newark's ultra-high-frequency radio is situated in the midst of a metropolis formed by more than 100 politically separate municipalities. Choice of antenna-transmitter location and of power was made with a view to serving 25 or more adjoining communities. The new radio is described by Michael P. Duffy, Director of Public Safety, Newark, page 46, February issue. On the next page a crime is solved in pictures.

Water Rates

To the more than 250 abstracted reports of the plant, rates and methods of municipal water departments that have appeared here during the last ten months, 11 are added on pages 71-75 of the February issue. All reports published in 1934, covering 237 cities, are now available in pamphlet form, price $1.

Chicago Sewage

Calumet treatment-works extension, started in 1930 and estimated to cost six millions, is two-thirds finished and will operate this year. Initial flow will be 75 mgd; estimated in ten years, 136 mgd; ultimate, 200 mgd. Pumps lift the incoming sewage 39 feet, and what happens thereafter is described on page 45, February issue. The excess sludge will be burned, 40 tons per day at the start.

Favorable Garbage Contract

Garbage collection by contract in Seattle had risen in cost to $900,000 by 1931, and the following year the City Council set $400,000 as the top figure. A five years' contract was let to a copartnership of experienced contractors in the materials-handling field for $364,278 per year, or about 90 cents per capita. How the contractors performed the work at a profit is told on page 41, February.

Obnoxious Billboards

The celebrated case of *General Outdoor Advertising Company, Inc., and others v. Department of Public Works, Massachusetts*, has been brought to a conclusion in favor of the state by a decision of the State Supreme Court, which recognizes the right of travelers on the highway to escape from the annoyance of commercial propaganda, and the legality of the protection of public amenity. An outline of the decision is given on page 40, February issue.

Canal Zone by Auto

The 3,250-mile highway from the United States boundary through Mexico to the Panama Canal Zone is 40 per cent complete, with an additional 27 per cent of it OK in dry weather. Page 11, February.

Smelly Sewage

Soon after a certain Imhoff tank and trickling filter were put in operation, many complaints were filed against obnoxious odors. The liquid in the Imhoff tank settling compartment and in the dosing tank was black and had the typical stale odor of septic sewage. This nuisance was decidedly reduced, so that complaints fell off, by a few days of continuous chlorination. Page 9, February.

A Trolley with Own Power

A new type of bus is to run in Newark, a trackless trolley that can also operate as an electric-driven motor-bus without having to connect to the overhead wire. Thus the bondholders in a company equipped with these trolley busses have the satisfaction of knowing that the plant, representing a large part of the physical value back of their paper, will be retained in use, and that at the same time their property has the flexibility of a modern bus system. Page 69, February.

Red Water

Iron is slightly soluble in water, and therefore all corrosive water would be unsatisfactory for drinking if the water were permitted to come in direct contact with the distributing pipes. But corrosive water may be treated, with calcium carbonate for instance, so that it will deposit a film on the inside of the pipe, thus preventing the iron from dissolving. To prevent corrosion, the calcium carbonate content must be 25 parts per million; if less than this, lime must be added, or if there is some calcium sulphate in the water then soda ash will build up the film. These measures prevent red water. Page 7, February.

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ALLIS-CHALMERS

TRACTOR DIVISION—MILWAUKEE, U. S. A.

MARCH, 1935

Vol. L, No. 3

The American City

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New York

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Regional Planning for Rivers

THE accompanying charts, Figures 1 and 2, prepared for the National Resources Board, present the contrast between planned and unplanned river development. In one case, where each community sees only its own relation to the river, the disadvantages, financial and social, multiply rapidly as the river flows down to the sea. Erosion in the upper regions deposits soil in the river, clogs reservoirs and hinders shipping. As long as small local units are the only planning bodies, opportunities for power, recreation, irrigation, and a pure water supply are neglected. Smaller towns are financially unable to afford separate water purification and sewage treatment plants. They do not—or cannot—take into account the dangers arising to other communities through their river pollution; and their levees and dams save some property upstream only to destroy more further down the river.

A river drainage basin is an entity; in the opinion of the National Resources Board, it needs one agency which can weigh the urgency and the importance of the various problems of the basin. Erosion control hundreds of miles upstream may mean cheaper power at the mouth of the river. One district sewage treatment plant, properly located, may cost less and serve more communities than would be feasible with individual plants. Coordinated regional planning is necessary to obtain the best results; only an agency the views of which are not limited by city or county lines can build dams which provide farms with irrigation, cities with water, counties with recreational facilities, and states with power.

The two charts compare, step by step, the results of regional planning—or the lack of it—as applied to a typical watershed. By intelligent reforestation, the regional plan will prevent or eliminate erosion and the resultant sacrifice of top soil and game. The regional plan will eliminate arid land, pollution of drinking water and mosquito-infested swamps. It will provide for an adequate water supply, for sewage treatment, and recreational opportunities upstream and on the beaches. Last, but not least, it will provide the region with water power.

Water power is one of the most valuable products of

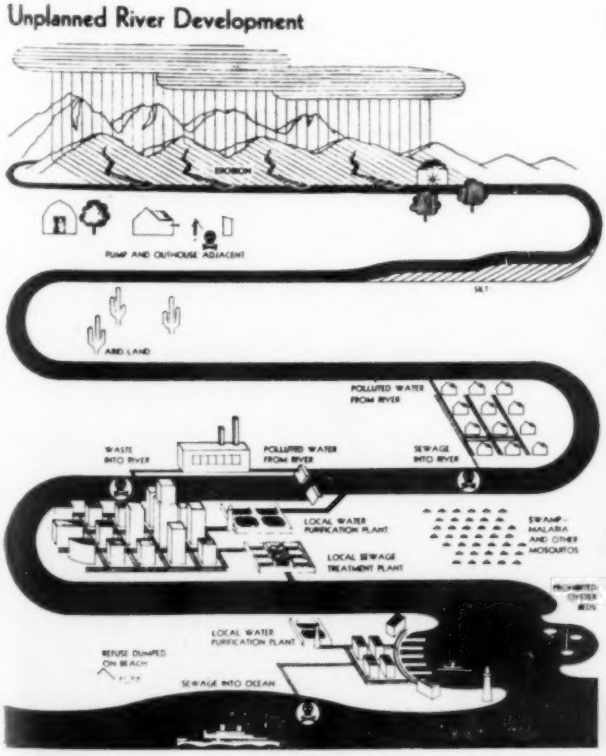


FIGURE 1

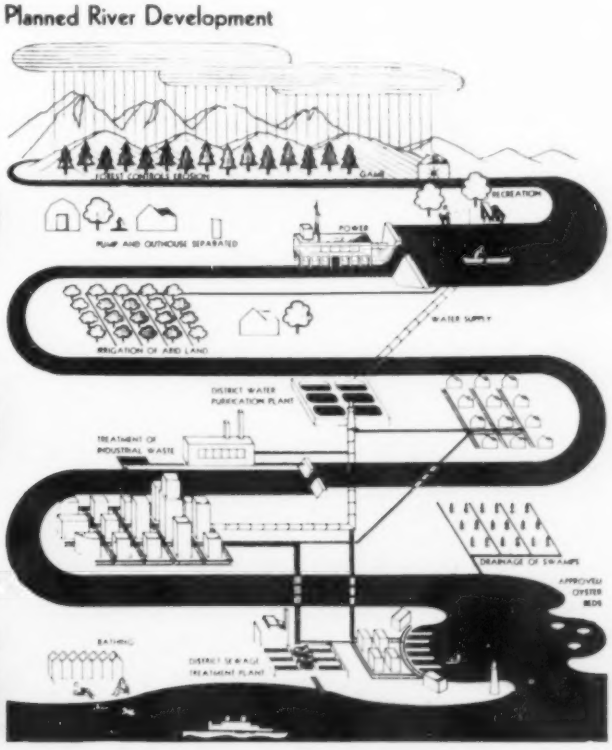


FIGURE 2

Power in the United States
One Million KW feasible undeveloped Water Power
One Million KW installed Water Power
One Million KW installed Steam Power

river development. The third chart shows the present power situation in the United States and the rôle which water power may ultimately play. Steam power is still by far the most prevalent source of energy; the undeveloped water power in the East is not large enough greatly to change this picture there in the future. In the Ohio basin the water power is of considerable importance; but to the north, even the enormous possibilities of the St. Lawrence project are small compared with the present installed steam power in the Great Lakes region. In the West the situation is reversed. Already water power is predominant and there are vast reserves of it still undeveloped. Judging by the quantity of total power installed in the West at the present time, these reserves will not be fully used for a long time to come.

EDITORIAL NOTE.—The pictorial charts which illustrate this article on Regional Planning for Rivers were prepared by the Water Resources Section of the National Resources Board under the direction of Rudolf Modley. Mr. Modley, who was Assistant Director of the Social Museum in Vienna and Curator of the Museum of Science and Industry in Chicago, is now Executive Director of Pictorial Statistics, Inc., an organization devoted to the pictorial presentation of facts. For some years widely used in Europe, pictorial statistics are now being rapidly accepted in the United States by educational and commercial organizations and government agencies.

New York City to Establish Planning Division and Annual Planning Conference

ON February 6 some 800 delegates from 200 civic organizations assembled, at Mayor LaGuardia's invitation, to consider ways and means for establishing a permanent planning conference out of which should grow a comprehensive physical plan for New York City.

Bernard S. Deutsch, President of the Board of Aldermen and Chairman of the Mayor's Committee on City Planning, under whose auspices the meeting was held, stressed the necessity of wholehearted cooperation among city and borough offices and between official and civic bodies for the furtherance of the work. He recommended that this conference meet once a year and meanwhile work out a basis for mutual action. Hs asked for a real city planning agency as part of the city government.

Mayor LaGuardia named several problems which a workable plan would solve. He, too, recommended that this conference be made permanent, an integral part of the government, a city planning division, where applications for changes in the plan should be filed not oftener than once a year, thus saving much of the time of the Board of Estimate and Apportionment.

Lawrence M. Orton, Secretary of the Committee, interpreted the maps and the studies that had been made with the aid of the Housing Authority, and pointed out the concentrations of building types and activities, and remaining undeveloped areas.

Tenement House Commissioner Langdon W. Post, who is also Chairman of New York City's Housing Authority, stated that nearly every one pictures city planning as the laying-out of broad avenues and the creation of beauty where squalor has been. The facts, however, were that the realities of traffic and existing expensive buildings made the successful handling of these hard facts an arduous exercise. Mr. Post emphasized the impossibility of waiting for a finished city plan before remedying the housing situation. At least a ten-year program will be required to rehouse the 400,000 families that dwell in nineteenth century buildings in the city. To illustrate the practicability of the project, he pointed to the interesting fact that the 250 million dollars that Rockefeller Center cost would replace 250 blocks of slums.

Lasting Benefits from CWA and FERA Grants

Baton Rouge Spent $175,000 on Sidewalk, Paving and Drainage Projects

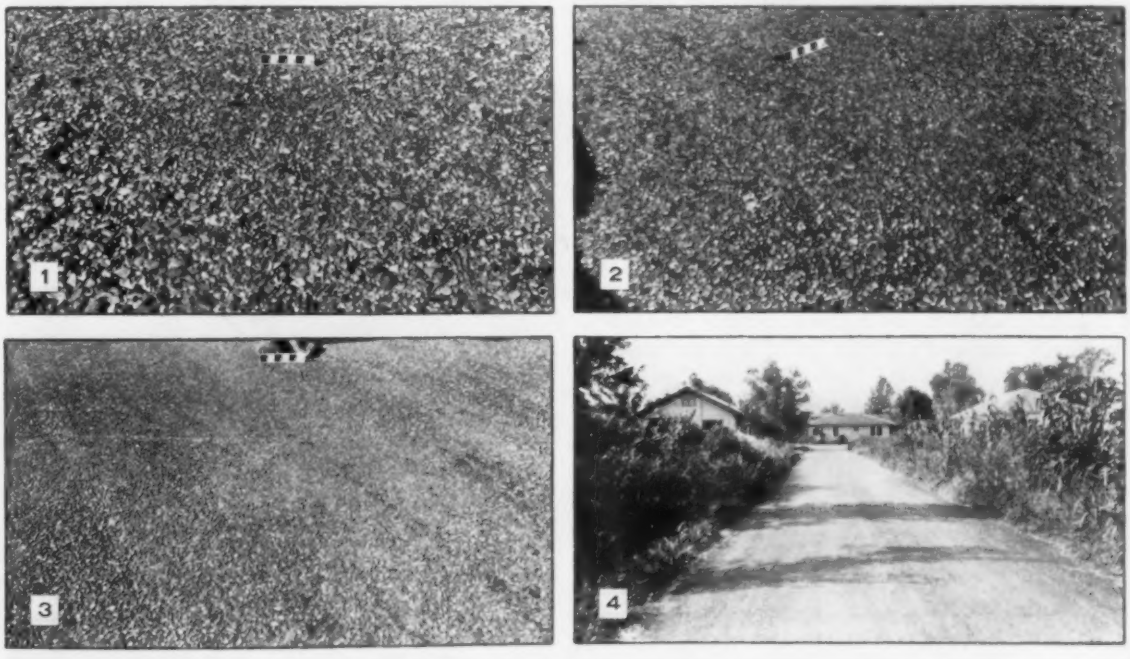
BATON ROUGE, which is the home of the beautiful state capitol building of Louisiana, has felt its responsibility as the capital city and has maintained its public services in as good condition as finances warranted. When CWA funds became available, this city was one of the first to make application for assistance, and it has spent every penny for projects which will be of lasting benefit to the community. An extensive drainage and spillway project at the northern end of the city near the capitol building will prevent the possibility of flooding out those having property on the lake which adds so much to the attractiveness of the section. Over 800 sidewalk intersections have been rebuilt with Federal funds, eliminating many dangerous places. The effect of the improvement in the intersections has been to stimulate property owners to replace old sidewalks which were in poor condition, thus adding to the general prosperity of the city through increased construction.

The major project has been the complete elimination of the dust nuisance on gravel streets throughout the city. There were 40 miles of paved streets and 30 miles of gravel streets in the city. During dry periods the gravel streets were very dusty and always required a great deal of maintenance to prevent the formation of corrugations and pot-holes. With CWA money for labor and cement, city funds for gravel, sand, and tools, and city trucks for hauling, the 30 miles of gravel streets are being surfaced with a double application bituminous treatment, which furnishes a blanket coat, doing away with dust, reducing maintenance and improving the appearance of the city.

With equipment furnished by the city and some of it built by the city shops, a double treatment of Bitumuls with gravel and sand was used to develop a 1-inch mat. The street to be treated was first shaped up with a grader, and all loose particles were bound with clay, sprinkled with water and rolled to a uniform base. This prepared base was swept by hand for the entire width to be treated, and then a layer of gravel graded from 1 inch down was spread over the surface at the rate of 40 pounds per square yard and broomed until the surface was evenly covered.

The first application of the asphalt emulsion, Bitumuls, was then made with the distributor at a rate of 0.5-gallon per square yard. After an interval of two hours, in which the emulsion broke down and the asphalt had time to set, a filler of gravel graded from ⅜-inch down was spread evenly at a rate of 30 pounds per square yard and broomed to cover the surface uniformly.

The second application of asphalt emulsion was made



PROGRESSIVE DEVELOPMENT OF GRAVEL STREET BOUND WITH EMULSIFIED ASPHALT

1. Gravel spread ready for Bitumuls. 2. After the first shot of emulsified asphalt and the application of gravel. 3. The job complete with second shot of of emulsified asphalt and blotting with concrete sand. 4. A completed street that has seen several months of service

IMPROVEMENT OF SIDEWALK INTERSECTIONS IN BATON ROUGE

soon after, at the same rate of 0.5-gallon per square yard, and blotted with concrete sand at the rate of 15 pounds per square yard, broomed and rolled. This resulted in a well-formed asphalt surface which shows every evidence of lasting for years with small annual maintenance.

The specifications for the materials required an emulsion with a penetration of asphalt of 180 to 200 prior to emulsification. The sand was required to be free of lumps of clay and all vegetable matter, and the coarse gravel to be clean, and graded as follows:

Passing a 1½" sieve	100 per cent
" " ½" "	40 to 70 " "
" " No. 4 "	0 to 5 " "

The filler gravel was of good quality, clean, and graded according to the following screen analysis:

Passing a ¾" sieve	100 per cent
" " ½" "	70 " "
" " ¼" "	30 to 40 " "
" " No. 4 "	0 to 5 " "

Labor Analysis and Costs

The original rates for labor were: foreman, $1 per hour; skilled labor, $1 per hour; and unskilled labor, 40 cents per hour. Now that CWA has been discontinued and the work is under the FERA the hourly rates have been reduced to 50 cents for the first two classifications and 30 cents for the last. This has resulted in a greater mileage of gravel road completed than would have been possible had the CWA rates been continued with the original plans and grant. The total sum applied to this work for labor only amounted to $56,028.40, under CWA.

The work was done under the direction of Powers Higginbotham, Commissioner of Public Parks and Streets, through the office of A. Swart, City Engineer, with C. Daniels, Street Superintendent, in immediate charge of the work.

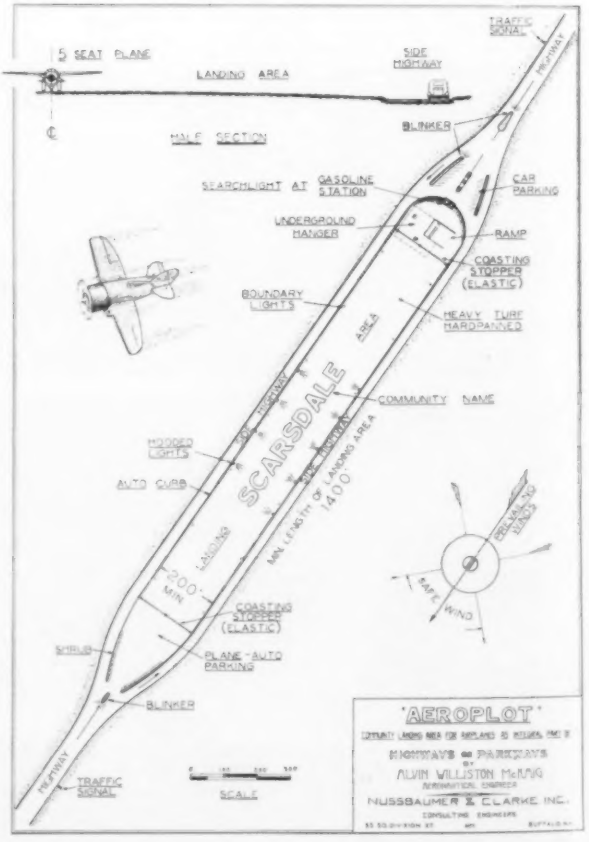
A Novelty in Landing Fields

This Project Suggests Landing Areas as Integral Parts of Highways or Parkways

A BROAD application of the fundamental principle that an airport must be useful and must be located as near as possible to the center of population has been made by Alvin W. McKaig in the "Aeroplot." This landing area is merely a widening of the highway right-of-way requiring a minimum width of 200 feet and a length of 1,400 feet. Airplanes would be permitted to land or take-off during the day or night on this area within two lanes of highway or parkway without interference from that traffic. This would be accomplished by means of semi-automatic highway traffic stop signals located beside the highway at a suitable distance from both ends of the landing area so that at the time of a landing or a take-off the field attendant, by means of a push-button, could halt all highway traffic. The signals could also be operated by the pilot of a plane through a tuned buzzer or siren signal from the plane which would actuate a tuned and timed receiving switch located on the premises and connected with the highway traffic stop signals. Full automatic actuation of the highway signals is believed possible by using plane detectors adjusted for direction and distance.

Location of Highway Landing Areas

The landing areas could best be located in either an existing or a planned future highway or parkway at a point where the right-of-way parallels the local prevailing wind or, as needed for safety when the wind has shifted 90 degrees from the prevailing wind direction, at a point in a highway where the right-of-way is at right angles to the local prevailing wind direction and the proper gliding distance from any other landing area, according to the



originator of this project. The most economic number of these landing areas for any given community, county or state may be obtained by plotting adjacent circles, the diameter of which is determined by using the minimum crossing altitude required by the Department of Air Commerce for the particular location under consideration and the safe gliding ratio of a plane, namely 7 to 1.

Value of Highway Landing Areas to the Community

It is claimed that such landing areas will create greater interest in aviation on the part of the suburban or urban resident by virtue of having such a convenient air service facility near his home providing a great saving of time whenever a trip is necessary. The distance to the nearest airport would become unimportant, for these Aeroplots would give easy and quick access to a commercial airport where air lines operate on schedule. A community airplane taxi service could be developed near one's home.

The concessionaire area at one end of the landing strip provides gas, oil and mechanical service, not only to automobiles going in either direction but to all airplane owners living within the community, also to a transient or any one landing in an emergency. Even suitable underground storage facilities may be provided for a resident owner of a plane.

How Public Works Cured a Chinese Depression, 2,600 Years Ago

A CORRESPONDENT of *The Christian Century*, Lewis F. Havermale, of Anacostia Station, Washington, D. C., has reminded the modern world of this significant and successful application of a "new deal" in China some 2,600 years ago:

In the period between 684 B. C. and 644 B. C. the Chinese statesman, Kwantze, who had been called to the premiership of the state of Chi to deliver the government and people from a depression caused by chaotic government, internecine warfare, and barbarian invasions, devised the following principles for recovery:

"First of all, facilities for the advancement of productive activities should be considered; land should be opened up and claimed for cultivation; shops and business firms should be established in the market; afforestation should be carried on in the country; moral encouragement and stimulus should be given to the people by the state in order to improve productive undertakings; agriculture should be advanced by the constructive cooperation of the state with the people; and the residences of the people should be well constructed and finished so that they can enjoy a high standard of comfort.

"Second, the conditions for the flow of goods should be facilitated. If there are unexploited natural resources they should be opened up for use. Accumulations of commodities in the market which are not easily disposed of shall not be tolerated, and steps should be taken to assist their distribution. Roads should be improved. Frontier passes should be made convenient for communication and for transportation of goods. Hotels and lodgings for the traveling merchants should be rendered adequate, and the security of their personal property should be guaranteed.

"Third, every assistance should be rendered to endeavors in afforestation and agricultural improvement, so that the people will revive immediate benefit from it. Therefore, marshes should be reclaimed and swamps should be drained. Dams should be built and waters which damage certain areas should be conducted away by dykes and canals. Bridges and ford passings should be constructed at the proper points.

"Fourth, there should be a generous paternalism on the part of the state toward the people. Taxes and miscellaneous assessments should be as equitable and unburdensome as possible. In the courts, the severe criminal cases may be treated somewhat more leniently and the sentences in civil cases may be made less severe, when it seems fit.

"Fifth, immediate assistance and sympathy may be extended to people when they are in a state of extreme emergency. Thus, the orphans, the widows and the aged may be well taken care of; the sick will be eased, and the bereavement in the family of the deceased will be mitigated.

"Last, financial aid may be accorded those who are in need of it. Those who lack the basic necessities such as food and clothing will be helped; and those who are without capital to carry on business will have the privilege of borrowing from the government."

These principles, translated from the Works of Kwantze, Vol. I. Bk. 3, Ch. 10, p. 16, would seem to include most of the experiments of the present administration. It is worthy of additional comment, writes Mr. Havermale, that Kwantze's policies were productive of astounding economic recovery. A modern Chinese student of economics remarks as follows: "Commerce and trade developed to phenomenal proportions during this period, surpassing that of any time in remote ancient history."

Public Housing—Lip Service or Action?

"TOO long have we delayed in this country our attack on the greatest shame of our present civilization—the slums," said Langdon W. Post, Chairman of the New York City Housing Authority, at the recent National Public Housing Conference, in Washington. "We now accept as legitimate and proper functions of government those which pertain to the health and morale of its people. We build hospitals, parks, playgrounds, health centers, parkways and national preserves with funds obtained through taxation. Slum clearance and low-rental decent housing for those who cannot at the present moment afford such housing is merely an extension of this social consciousness. Nothing is more important; nothing has been longer delayed; nothing has been more bitterly opposed by the ruling class in this country, although that class is definitely responsible for the creation of the slums. . . .

"I am afraid that most city governments are still in the lip-service stage of housing, and unless they speedily step out of this stage into one of activity they will lose the greatest opportunity they have ever had to make a real beginning in eradicating the evils of their slums. I cannot stress this too strongly. The approach to the problem demands immediate action. The President has stated that he expects and hopes that a large sum of money will be spent in slum clearance and low-rental housing. If the cities of this country are not organized so that this program can be put into immediate action, they have nobody but themselves to blame and it will be necessary to spend this large sum of money in other ways. The tragedy of indifference to the possibilities of this program will be deep, and the responsibility placed upon the shoulders of the city officials is so great that the people of the cities will not easily forgive if this responsibility is ignored."

How Taxes in Two Canadian Cities Help the Small Home Owner

TAX policies for lightening the levies on small home owners, which have been operative long enough to have demonstrated their value, are in force in at least two Canadian cities. The following statements regarding these methods of real estate taxation have come to THE AMERICAN CITY recently from the Mayor of New Westminster, B. C., and from the Treasury Department of Toronto, Ont.

Single Tax for City Revenues

Writes Mayor F. J. Hume, of New Westminster:

"Twenty-three years ago the city of New Westminster abandoned the then existing form of taxation and adopted the single-tax system, eliminating all taxes other than upon land values. It was felt that imposing taxes on improvements discouraged ratepayers from carrying out desirable additions and changes which under the single tax they might do.

"Since this system has been in vogue, the city of New Westminster has reaped considerable benefit by way of increased population and additional number of property owners residing in the municipality. Gradually more persons were encouraged to purchase property and become home-owners. The single tax discouraged vacant land speculation and assisted manufacturers. This city is believed to have the largest percentage of individually owned, unmortgaged homes of any city on the continent. It now has the largest invested capital per person of any city in the Dominion of Canada, and this capital investment is not in inflated speculative land value but rather in factories, machinery, stores and goods.

"Population and industry have boomed, but land speculation has been buried. It is now unprofitable for real estate dealers to withhold sites from prospective buyers. The average citizen is now loud in his praise of the existing single tax system, which reduces the cost of land and does not penalize improvements. Land can be purchased from the municipality at reasonable rates. There is therefore but a small percentage of non-productive property in the city and a small proportion of property reverting to the city for non-payment of taxes. The protection of the interests of the ratepayers has meant more business for the lumbermen, paint dealers, furniture factories and all building trades.

"The single tax has made it easy for the business man and producer to establish themselves. I feel the single tax has also had a tendency to reduce unemployment crises and the seasonal slump in this city, as the manufacturer and merchant do not have to carry in their overhead expense the dead weight of a large investment on high-priced land, nor do they have to maintain taxes on their buildings, machinery and equipment. Hence the factories and mercantile houses of New Westminster have been able to keep operating, when in other cities a number have had to partially or completely close down. Every encouragement is given to every bona fide prospective industry. The Council is authorized to submit a by-law to the ratepayers and upon obtaining a three-fifths affirmative majority to grant the affected industry a fixed assessment on land for a period of years, in addition to the regular exemption of improvements.

"The existing industries over the said period of 23 years have been able to provide their employees with comparatively steady work. The financial condition of New Westminster also bears inspection and will be found to compare favorably with other cities in Canada and the United States for low per capita tax figures, and has one of the highest percentages of tax collections.

"The real estate dealers in New Westminster have played the roll of home builders rather than land gamblers. Abolition of taxes on labor products has assisted in inducing a normal community development and a thoroughly diffused prosperity as well as a widely felt sense of economic security and freedom."

A Graded Tax System

Under authority of the Ontario Assessment Act (Chapter 238, Section 41) the city of Toronto adopted By-law 8611, effective January 1, 1922, and still operative. This provides that taxes and rates (except for school purposes) on dwelling houses assessed for not more than $4,000 shall be levied and imposed as follows:

On dwellings assessed for:	Percentage of Value to Be Taxed:
$2,000 or less	50 per cent
2,001—2,500	60 " "
2,501—3,000	70 " "
3,001—3,500	80 " "
3,501—4,000	90 " "

Explaining the operation of this method of taxation, G. A. Lascelles, Executive Secretary of the Treasury Department of the city of Toronto, writes to THE AMERICAN CITY:

"Section 40, Clause 2, of the Assessment Act for the Province of Ontario provides as follows with respect to assessing real estate:

"'(2) In assessing land having any buildings thereon, the value of the land and buildings shall be ascertained separately, and shall be set down separately in columns 14 and 15 of the assessment roll and the assessment shall be the sum of such values. The value of the buildings shall be the amount by which the value of the land is thereby increased.'

"In the following Section (41) provision is made for the graded dwelling exemption, and specifies that the exemption shall apply on *dwelling houses* assessed for not more than $4,000, etc."

"This legislation was designed to assist the small home owner by giving him a certain amount of relief from taxation and placing it upon others more able to pay. The total taxable assessment for the City of Toronto this year (1934) amounts to $1,026,062,674, and it is against this assessment that the school rates are levied. By reason of the operation of the Graded Dwelling Exemption By-law the general rates are levied against an assessment of $955,137,735. The difference between the two assessments, amounting to $70,924,939, represents the exemption on dwellings assessed up to $4,000. It might be or interest to note that approximately 60 per cent of houses in the city of Toronto are occupied by their owners."

Quote freely from THE AMERICAN CITY. But please give credit.

Modern Cemetery Design and Development

By LAURENCE S. CALDWELL
Landscape Architect, Boston, Mass.

THE consideration given to cemetery design and development during the last fifty years has been largely responsible for the great advance noticeable today in the sense of fitness and appreciation of what a cemetery should mean in a community, as shown in the extensive development of the cemetery of park-like character throughout the country in this period.

The inadequately planned graveyard or cemetery with its usual lack of adaptability to the site, its crowded headstones, granite curbings, lot fencing, and poor planting arrangement, has given way to the modern cemetery where the natural beauty of the landscape is maintained and enhanced by skilled planning. Whereas a large proportion of the old types of cemeteries were uninteresting and repelling because of the hodgepodge of objects, and the monotonous view of tombstones, the new cemetery should become a park-like area with inspiring natural scenery carefully preserved and developed to attain a high degree of quiet dignity and peace.

A SECTION OF MT. AUBURN CEMETERY, CAMBRIDGE, MASS., BEFORE IMPROVEMENT

The model cemetery should first of all be located as closely as possible to the center of the area to be served but removed enough to make sure of the permanent security necessary for peacefulness, and free from encroachment by undesirable elements. It is essential that the site should have attractive natural features such as a varied landscape, a chance for water development and, if possible, native woodland growths that could be used to gain immediate landscape effects. The land should be mostly of porous gravelly formation to the depth of at least six feet, with a reasonably fertile topsoil and good natural drainage. Existing streams and lakes should be utilized to create interesting water views and contrasts. The roadways and paths should be so designed as to fit the existing topography as closely as possible, and to be largely concealed from one another by winding through sections of lawn and plantings, so as to cause a desire to explore beyond, revealing new charm of landscape.

The necessary buildings such as office, chapel, crematory, and service buildings should be so designed and located as to harmonize with the park-like surroundings. The plan for lots and planting should be carefully worked out so that the lots are individually attractive, having a maximum of seclusion, and still are in accordance with the specific ideal of a worthy landscape as a whole.

The monuments should be under strict control by the cemetery authorities as to design and location, which would result in individually better monuments, and in many cases less conspicuous ones. The most attractive sections of the cemetery should be restricted so that all memorials except at certain designated locations are level with the surface of the ground, thereby maintaining the natural beauty of the area.

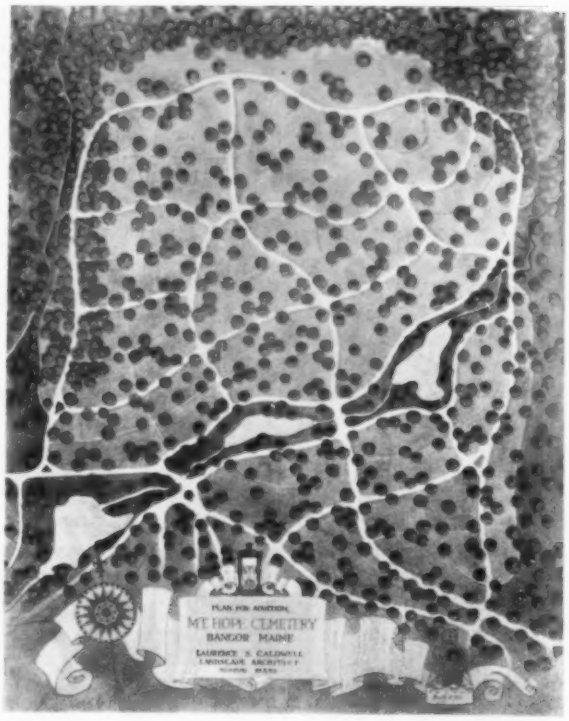
The preservation of the existing growth and the arrangement of planting materials such as deciduous and evergreen trees, shrubs, and flowers should

THE SITE SHOWN ABOVE, A YEAR LATER
Laurence S. Caldwell, landscape architect

be carefully designed to secure pleasing effects in mass, foliage, fruit and flower at all seasons of the year. Good planting composition should make for an attractive and cheery landscape throughout the year and one that is particularly desirable during the winter months.

The design and completion of the modern cemetery require the skilled services of a landscape architect who is a thoroughly trained and specialized person. He should be able, if provided with a suitable area and the cooperation of the cemetery authorities, to develop ultimately a cemetery that one would wish to visit as a beautiful park. It should become a location of venerable trees and excellent landscapes. It should be a place for all hardy plants, a safe haven for birds, and a spot where visitors would have seclusion and quiet for a full appreciation of the beauty of nature.

The accompanying plan shows the general design for an addition of approximately 60 acres to Mount Hope Cemetery at Bangor, Maine. This has been planned to meet the requirements of modern cemetery practice, first, in being adapted to the site. The location is a rolling landscape, allowing opportunity for an interesting road and pathway development. An existing stream is to be utilized to create a series of natural lakes which will be the chief feature of a central park area, shown diagonally across the plan. The lot plan and the restriction of monuments will be so arranged that the natural beauty of the site will be maintained. All planting will be confined to materials that are indigenous to the locality. It is expected that the final result will be not "a cemetery that looks like a cemetery," but rather an area of cheerful landscapes, a place that will not be forbidding but will attract those who wish an opportunity to appreciate nature in its beauty and tranquillity.



GRACEFUL SETTING OF THE MARY BAKER EDDY MEMORIAL IN MT. AUBURN CEMETERY

To Give Architecture a Broader Significance

The Columbia School of Architecture has established a town planning studio in which a class, limited to ten advanced students, will receive practical instruction in the organization, expansion and rebuilding of American cities, including considerations of the social and economic problems which underlie architecture. The studio will be under the direction of Henry Wright, designer of Radburn, N. J., and Chatham Village, Pittsburgh, Pa. The group will immediately undertake a study of an area of New York City north of Columbia University extending from 125th to 155th Streets between St. Nicholas Avenue and Riverside Drive. Recreational areas, traffic conditions, industrial and commercial facilities, character of population and problems of health and education will be analyzed under Mr. Wright's guidance, following which definite recommendations for the protection and improvement of the area will be brought to the attention of local authorities.

Five Hundred Serve a Million and a Quarter

The Work of the Refuse Collection Division of Los Angeles

THE Refuse Collection Division of Los Angeles, Calif., has charge of the collection and disposal, both by city forces and by contract, of garbage, non-combustible rubbish, and dead animals. Combustible rubbish is collected by private licensed collectors.

The Division employs a total of 465, except in the vacation period at the time of the summer garbage peak, when about 40 additional persons are employed. The personnel, except for the vacation relief, at the end of the last fiscal year consisted of the superintendent, 8 foremen, 6 clerks, 1 automobile machinist, 2 blacksmiths, 2 blacksmith helpers, 124 truck drivers, and 321 laborers. The employees work 40 hours per week.

During the last year a collection unit of six trucks under a foreman was set up for the West Los Angeles area with delivery to the Stoner Avenue yard, and an additional foreman was employed to supervise contract collection, which was formerly handled by the Street Maintenance Division.

Frequency of Collection

The population of the entire city receives refuse collection service, with the exception of about 1 per cent living in sparsely settled outlying areas. The city forces collect about 90 per cent of the total, and the remaining 10 per cent is collected by contract, largely in the Harbor, Venice, Eagle Rock, and San Fernando Valley areas. Garbage collection is semi-weekly throughout the year for the majority of the city, three times a week for the close-in apartment house area, and nightly for the business district with its cafés and hotels.

Non-combustible rubbish is collected twice a week in most of the city, with monthly collections in a few outlying areas, and weekly collection is the rule in the central business district. Dead animals are collected daily on call. Full collection service is given on all legal holidays. All refuse is presumed to be the property of the city, and its disposal is controlled through ordinances which make it unlawful to transport it over the city's streets without a permit.

Disposal of Garbage

Disposal of garbage is entirely by feeding to hogs on well-kept sanitary ranches situated outside the city. Contract collections go to various ranches, and garbage from the major portion of the city is sold to the Fontana Farms Co. on a ten-year contract expiring in 1941, at a price of 50 cents per ton f.o.b. cars at a loading station at 25th and Harriett Streets. By a supplemental contract of December 5, 1932, payments are deferred until the sale price of hogs advances to 6½ cents per pound, and thereafter on a sliding price scale for hogs the city will receive both direct and deferred payments with interest at 7 per cent.

Starting January 3, 1934, the garbage from West Los Angeles, amounting to about 1,000 tons per month, which was being hauled to the central receiving station at 26th and Harriett Streets, was delivered to a yard at 2027 Stoner Avenue and dumped by crane into contractor's trucks under a three-year contract ending January 2, 1937, which calls for payments to the city of $25 per month for 18 months and $100 per month thereafter. The rate for the latter period amounts to approximately 10 cents per ton.

MUNICIPAL INCINERATOR OPERATION FOR FISCAL YEAR 1933-34

Item	Total	Per Ton of Total Tons	Per Charge Ton
Salaries	$32,670.72	$1.156	$1.345
Expense			
Materials and supplies	1,173.82	0.042	0.048
Water	167.52	0.006	0.007
Gas	65.85	0.002	0.003
Power and light	1,317.10	0.046	0.054
Use of equipment	3,417.40	0.121	0.141
Sub-total	$ 6,141.69	$0.217	$0.253
Repairs to plant	$ 1,925.73	$0.068	$0.079
Total operating expense	40,738.14	1.442	1.677
Receipts	24,317.10	0.861	1.001
Operating loss	$16,421.04	$0.581	$0.676
Capital charges			
Bond redemption	$15,000.00	$0.531	$0.617
Bond interest	20,925.00	0.741	0.861
Taxes	1,651.33	0.058	0.068
Sub-total	$37,576.33	$1.330	$1.547
Total loss	$53,997.37	$1.911	$2.223

Item	Total
Tons burned	
Charge	24,283.24
No charge	3,971.60
Total	28,254.84
Tons burned per employee per month (employees on 40-hour week basis)	98.15 average

NOTE.—The above statement is on a different basis than in former years. The arbitrary depreciation charge has been replaced by the actual expense for capital charges.

Disposal of Non-Combustible Rubbish

Non-combustible rubbish is disposed of on local dumps for the 9 per cent collected by contract, but the 91 per cent which is collected by city forces is disposed of by the Los Angeles By-Products Co. at its plant at 25th and Alameda Streets under a ten-year contract expiring in 1940, which provides, in effect, for no payments either by or to the city. This was modified, however, by a supplemental contract on July 28, 1933, which provides that the city shall pay 60 cents per load of 12½ cubic yards for dumping at the contractor's plant until the price of baled cans rises to $7.50 per ton, after which the city shall pay at lower rates, and finally be reimbursed as the price rises above $10.50 per ton. Baled cans are sold to foundries and to copper concentrating plants for use in the leaching process of extracting copper. Bottles, broken glass and non-ferrous metals are also salvaged from this rubbish.

Disposal of Dead Animals

The disposal of dead animals is by a three-year contract with the California Rendering Co., Ltd., which converts them to fertilizer by reduction. The city receives a flat

sum of $25 per month for all dead animals it collects, on a basis of delivery at the fertilizer plant.

Transportation

During the year, studies and experiments were made which demonstrated that about 30 per cent of the cost of collecting garbage in the close-in areas by teams with a crew of one man could be saved by using 1½-ton trucks with a 2.8-cubic-yard body and a crew of only two men. This light truck with its smaller crew also saved about 13 per cent over the cost of collection with heavy trucks with 5-cubic-yard bodies and a three-man crew. Further experiments will be made with the nine light trucks purchased at the close of the year. Fifteen large four-wheel trucks were purchased during the year for replacement purposes. Present policies indicate the entire elimination of the slow-moving mule teams in the near future.

In January, 1934, work was started as a Civil Works Administration project, on constructing a modern transportation yard for housing and servicing 110 refuse trucks on city-owned land which previously had been entirely unused. Many of these trucks have been parked for years out in the open or rented land, which until recently cost the city $300 per month. Thus this change will save the city considerable rental as well as a much larger amount in depreciation on the trucks, because of their being under cover. The sheds are of steel and corrugated iron with pavement, shops, etc. The work ceased on March 29, 1934, and was resumed on June 29, 1934, as an SERA project. The city provided $37,076 for materials, and the balance of about $100,000 has come, or is to come, from the Federal Government.

During the year, the following policies were put into effect: On March 29, 1934, crews were required to take a 30-minute lunch period during the day between loads, having previously eaten lunch on city time; tires are now branded with a city serial number, and a careful record is being kept of their service and mileage; tires are now being retreaded or recapped to extend their life and reduce tire mileage costs. On February 7, 1934, the Board of Public Works ordered that collection routes be laid out so that employees would not be required to work more than eight hours on any day except in an emergency.

The Municipal Incinerator

The municipal incinerator, located at Twenty-sixth Street and the Los Angeles River, in the city of Vernon, was built for the purpose of burning refuse, at a fee of $1.00 per ton. In general, no garbage is consumed, although about 10 per cent of the tonnage is market refuse. Most of the latter, however, is hauled under private permit from markets direct to hog ranches. The incinerator operates 24 hours a day, 6 days a week, but is closed on 6 important legal holidays.

The personnel of 25 employees consists of a superintendent, 3 clerks, who weigh in the material and collect the fees, 1 repairman, 1 truck driver, 2 acting foremen, and 17 laborers. Employees work 40 hours per week, except the clerks, who work 35 hours.

The incinerator was built under a special bond issue in 1927 to do away with the practice of burning refuse on open private dumps, and in addition was designed for the incineration of garbage in an emergency.

The 10-acre site, consisting of an old sand and gravel pit, cost $180,000, and the incinerator cost $420,000. It comprises eight circular Nye furnaces, four combustion chambers, and four stacks. The maximum use was at a rate of about 200 tons per day in 1930, and is now about 100 tons per day. There is no attempt to salvage either heat or ashes. The refuse is received in privately owned collection trucks operating under permit, weighed on a platform scale, dumped on a large receiving floor, and pushed by a small bulldozer and by hand into the charging holes of the furnaces.

On November 11, 1933, the custom of using fifteen to twenty men from the chain gang as free laborers to clean up and load ashes was discontinued, as the large number of men required greater expense for their guards and daily transportation than the cost of the two laborers needed to replace the gang. There has been an improvement in morale due to this change, as well as a reduction in cost.

On March 23, 1934, the old custom of allowing about fifteen junk salvagers, non-employees, to operate on the charging floor in picking paper, rags, cans, etc., from the rubbish in return for some assistance in charging furnaces at rush periods, was stopped. No additional help was needed to replace them, and the hazard and the unsightly piles of junk were eliminated.

Special Investigation

During the past year a determination was made of the thickness of the fire brick in the domes of the furnaces, and it was found to average 4½ inches, having been reduced from 9 inches by slagging and spalling in the 6½ years of service, during which 35,000 tons of rubbish have been consumed per furnace. A request was made in the next budget for $22,000 to reline the furnaces, combustion chambers, and lower portion of the chimney stack lining, but this was not allowed, owing to shortage of funds.

A careful survey was made by the Bureau of Standards in February, 1934, of the temperatures in the furnaces and their distribution. It was found that the daily range was from 100 degrees to 1790 degrees F., and the variation within a period of one hour was from 1060 degrees to 1790 degrees F., with a difference in temperature within two-minute periods of as much as 400 degrees F. Also, the movement of a furnace dome was measured by means of an Ames dial and it was found that the daily rise and fall of the dome at that point amounted to 0.735 inches.

The Refuse Collection Division operates as a part of the Bureau of Engineering under the direction of Lloyd Aldrich, City Engineer.

Sales Taxes—State vs. Federal

Results of a Federal manufacturers' sales tax, along the lines of the Treadway Bill recently introduced into Congress, are analyzed for advantages and disadvantages in a report of the research staff to the Interstate Commission on Conflicting Taxation made public January 31 by its Secretary, Henry W. Toll, who is also Executive Director of the American Legislators' Association.

A Federal sales tax to take the place of the existing and prospective state sales taxes would undoubtedly have administrative advantages, says the report, which was prepared under the direction of James W. Martin, Research Director for this Commission. On the other hand, the report shows, it would tend to upset state tax systems by reducing revenues in some states and providing more income than is necessary in others.

The staff of the Interstate Commission on Conflicting Taxation also points out that adoption of a Federal sales tax would extend to all the country a tax which bears heavily on people with low income as compared with its effect on the incomes of the well-to-do. It is suggested, too, that the tax would doubtless interfere materially with increase in business activity.

For copies of the report, application should be made to the Interstate Commission on Conflicting Taxation, 850 East 58th Street, Chicago, Ill.

Post Offices and Civic Centers

By GEORGE HAMILTON MILLER
Landscape Architect and Town Planner

WHAT a glorious opportunity to create civic center groups of public buildings in our cities, towns and villages throughout the country has been presented to the Public Works Administration in the expenditure of its vast sums of money on new post offices!

How is it working out? As a typical example consider the case of a town in Westchester County, New York—*not* Scarsdale (see next page.) The area near the railroad station is crying for rehabilitation, and in this a proposed new post office might be a great help. Dilapidated streamsides parallel the main street a block depth behind the stores, and an excellent opportunity is offered to transform these streamsides into a beautiful wide greenway leading to the seaside park and create new values through the heart of the town. On one corner of a short street leading to this area and directly opposite the railroad station, the town owns the site for a new city hall. The other corner offers a perfect site for a new post office. Obviously, here is an opportunity to cut the corners of the two sites, create a station plaza at the beginning of a new boulevard, design the two buildings to balance on the axis of the railroad station, and establish an imposing new architectural gateway to the community that would be a source of pride to any commuter alighting from the trains.

Did the idea occur to the silent, semi-secret, civil-service sites agents of the Post Office Department? It was none of their business, because the particular site had not been voluntarily offered for sale in response to advertisements or otherwise. These sites agents are not exactly in the category of letter-carriers but, far from having the imaginative sensibilities of a town plan artist, they located the new post office in distant no-man's land—and the community is penalized accordingly for all time. Nor is this a case of economy in buying a cheap site and forcing business to go to it, thereby creating unearned increment to the value of intervening property.

The Civic Center the Heart of the Plan

The real art of town planning is in coordinating all features of a town plan in one comprehensive, correlated and orderly working composition, with the civic center at the heart of the scheme. Around it, with faith in God, in ourselves and in our country, it would be fortunate if all the rest of the features could evolve in a far-seeing fashion from the beginning. But it happens that only when we find our individual needs to be affected do we seem to tackle our collective problems. Could complete grasp of these be exemplified more graphically than by an orderly, efficient and beautiful group of public buildings in the heart of a community? Not distorted by pull in one favored direction or another, but rather a strong central group with balanced relation to all parts of the community, a symbol of straightforward and equal service to all, inspiring respect and pride in the community. Architecture is a record of the ways of people; even the element of beauty has high commercial value to a community, as well as cultural influence.

Almost every community requires at least a railroad station, a post office and a town hall, and usually also a library, a school and a church or two, if not a court-house, a club-house and a hotel. This is some of the stuff of which a civic center is composed. But of all these buildings perhaps only two are ordinarily under the same control. Moreover, the construction of several new public buildings seldom is needed or can be afforded by one community at one time. So, if three or more are to be grouped, the sites must be planned and acquired in advance and held until needed, because it is not practical to tear down expensive modern buildings.

The problem of creating a civic center is primarily the business of the local community and, as a matter of fact, the creation of local planning boards with adequate authority has overcome the politico-legal difficulties. Unfortunately, however, too often in the past the attempts of these local boards and their advisors to solve the physical problems involved by drawing up schemes as elaborate and costly as they have proved to be impracticable and unsound, have had the effect of generally discrediting the whole civic center idea. The most common mistake has been in proposing buildings which would be complete in the beginning, hemmed-in by streets on all sides, with no provision for expansion; but practically none of these schemes have ever been carried out.

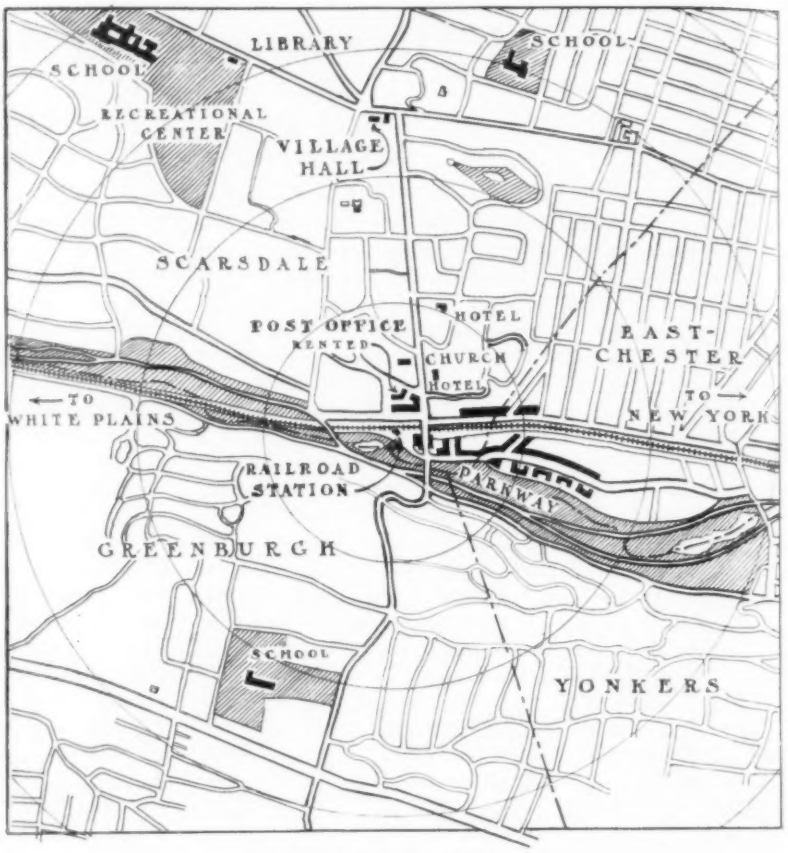
Present Needs and Future Requirements

Since space requirements of the future cannot be estimated accurately in advance, the scheme of buildings of a civic center must be elastic. This logically suggests that only one or two finished fronts of each building should face a street, leaving land for horizontal expansion to the rear. Enough land should be acquired in the beginning, but, if need be, still greater expansion can take place vertically, in the rear. This should be planned in advance, however, to be a background enhancing the frontal effect. That the arrangement of locations and the composition of masses in a manner suitably expressive of the dignity of public buildings may be fully effective, they should be visible from a distance and at a wide angle. Therefore, it is highly desirable that they face a liberal central open space, a public square, a plaza or green, containing foreground frames in the way of foliage or architectural ornaments, the simpler and more useful the better. Such a conception saves the cost of expensively finished façades and assures a maximum of permanency with decided economies in the long run. All the buildings can be designed in a correlated architectural style and remain a permanent civic monument mellowing with age.

Is this a job for a Post Office Department sites agent? In actual practice it is inconceivable that proper results can be attained when post office locations are determined from lowest land-cost bids received from advertisements, or the opinions of local politicians and others having a direct selfish interest, without regard for known principles, experience and best practices in town planning.

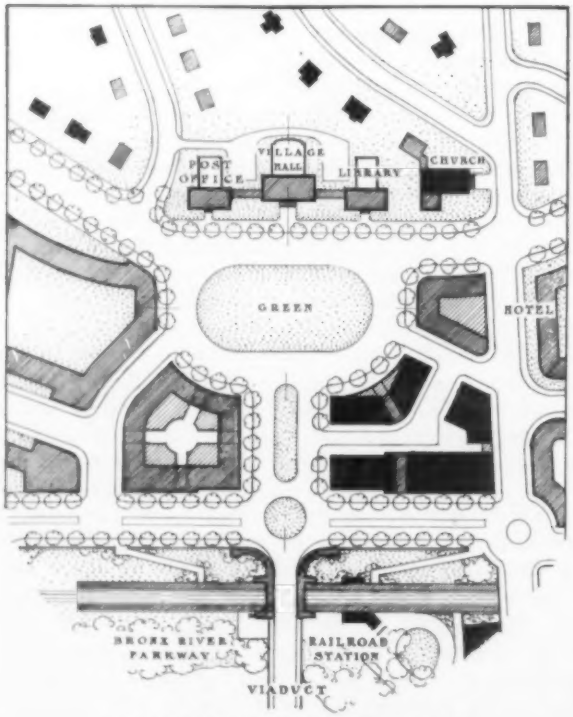
When the problem is approached with a spirit of civic idealism and more far-seeing and constructive incentive, it is likely that a proper conception of a post office site and design will be evolved from study of some local physical rehabilitation which at first may seem quite remote to the post office problem, such as swamp reclamation, slum clearance, a bridge or a wide plaza acrooss a railroad or a stream, a new alignment of a thoroughfare, creation of a park, a parkway, or a public square, all problems in town planning. But ever in the mind of the competent town planner, while studying these problems, would be a vision of an ideal group of buildings, with necessary land features, some of which might already exist; three, five or more buildings, usually an uneven number, to permit a central head of the scheme, framed on axis with balance, even though that head may be at a distance; because, as has been well stated, we in this country never *come* to an important public building; we are always *passing* them.

The deplorable fact is that the public buildings in most of our American cities, towns and villages are scattered in different parts of each community with little or no relation between the site and design of one building and another. This undemocratic isolation



SCARSDALE, N. Y., AS IT IS
Showing scattered locations of public buildings, although the settlement grew around a railroad station

penalizes business between the different public buildings, business of the community with each, and consequently penalizes the conduct of all business in the community. When sites agents, with the prestige of the United States Government behind them, are sent to select and acquire a site for a new post office, the Federal Government assumes a responsibility whereby it can make or break the possibility of a satisfactory civic center in a community for all time. How such a civic center might still be developed in another Westchester County community—Scarsdale—is shown in the accompanying map and plan.



THE SCARSDALE CIVIC CENTER AS IT MIGHT BE
Showing how public buildings might be grouped in an orderly civic center as a buffer between the business and residential districts

"What Is the Future of American Cities?"

The recently organized American Society of Planning Officials will join with the National Conference on City Planning, the American City Planning Institute, and the American Civic Association, in a joint annual conference, to be held in Cincinnati, May 20-22, 1935. The conference theme, "What Is the Future of American Cities," will be interpreted in terms of possible city, regional, state, and national planning measures.

Headquarters for the American City Planning Institute have been established at the Harvard University School of City Planning with Howard K. Menhinick as Secretary.

A new publication entitled *The Planners Journal*, edited by the Institute Secretary, with Prof. Henry V. Hubbard as consulting editor, will make its appearance in early April. There will be six issues during the year. *The Planners' Journal* contents will include preprints of Institute papers, followed in succeeding issues by discussions of the papers, special technical articles, announcements of publications of particular value to professional planners, and news of Institute members and affairs.

City Water Supply from Bottom of 100-Foot Shaft

Novel Source in Tallahassee, Fla., Cuts Operating Expense

BY shifting from four smaller and older driven wells to a single large well driven from the bottom of a 100-foot shaft, with the pump motor and suction as well as the drainage pump and ventilation fan all located snugly around the elevator well, the city of Tallahassee has greatly increased its water supply, reduced operating expenses and still has the entire old equipment, pumps, motors and well to fall back on if an earthquake or other great subterranean disturbance should put the 22-inch well out of commission.

The Pump House

Viewed from the street, the new pump house is an attractive brick structure set back some 100 feet from the street with a terraced grass lawn and a background of trees. In order to make this new source available and sightly, the city purchased a plot of land fronting on the street, paying $1,000 for the 70 x 77.5-foot plot adjoining the old water works. An additional $15,986.46 spent for the building, shaft, well and all equipment gave the city an adequate supply of excellent water from a deep well.

The Shaft and Construction

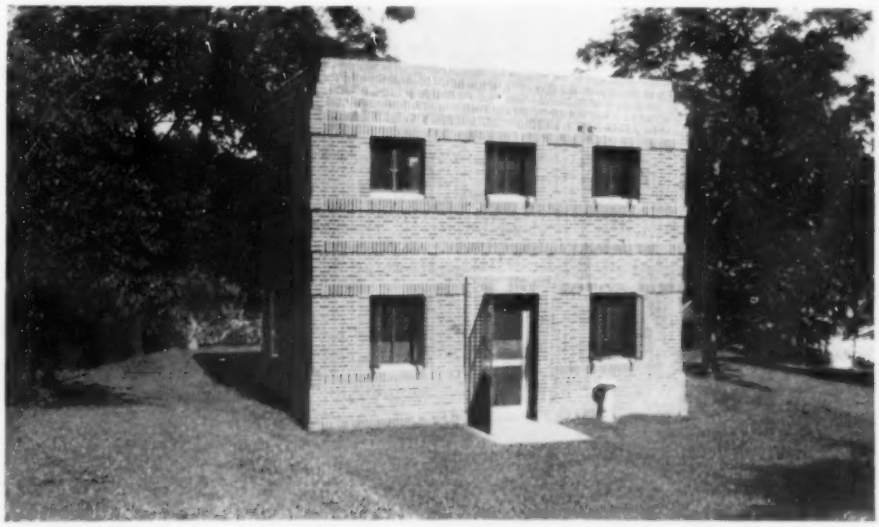
A temporary heading was built when the construction of the shaft was undertaken, and in it was housed the same elevator and hoist that now operates the elevator carrying the Water Department employees who handle the plant. This is a J. A. Curran hoist with a 15-hp electric motor. The shaft was excavated slightly less than 100 feet, but the added elevation of the pump-house foundation makes the shaft just 100 feet deep from the floor of the house to the floor at the bottom of the shaft. The top 55 feet of the shaft is 4 feet 4 inches by 5 feet 10 inches, and the floor at the bottom is 11 by 13 feet. The wall sections from the top down are successively 8, 10, 12, and 15 inches thick, increasing to 48 inches thick at the foundation line on rock 13 feet 9½ inches above the bottom of the shaft. At the bottom of the shaft the walls are 17 inches thick. The quantities involved were: earth excavation, 210 cubic yards; rock excavation, 325 cubic yards; concrete, 223 cubic yards; reinforcing steel, 22,000 pounds.

The elevator cage is just large enough to run in the shaft and leave room for the 12-inch riser pipe and for use of the safety ladder set in the wall for the entire distance from top to bottom of the shaft.

The Pump Room at Base of Shaft

In the 11 x 13-foot room at the bottom of the shaft is located at one side the top of the 22-inch well bored in rock and holding 140 feet of water. From the center line of the pump casing to the top of the water in the well is just 7 feet, but there is a draw-down of 6 feet when the pump is running at full capacity of 1,500 gpm. The pump operates at 1,700 rpm and delivers the water to the elevated steel tank at an elevation of 200 feet static head above the surface of the ground at the pump house, or a total of 300 feet. The pump is driven by a direct-connected 150-hp Westinghouse motor, and the pump is a 2-stage, 6-inch Worthington volute unit with an 8-inch valve, suction pipe and gate and a 6-inch discharge pipe, gate and check valve. It delivers to a 12-inch riser and 12-inch main 6,100 feet to the elevated tank. The pump is automatically brought up to speed when the starting button is pressed at the top of the shaft. It can be instantly stopped at either the top or the bottom of the shaft.

A small blower driven by an elecric motor delivers 1,400 cubic feet per minute of air from the bottom of the



THE PUMP HOUSE OVER THE DEEP-WELL SHAFT

shaft, immediately removing any obnoxious fumes that might gather at the bottom of the shaft through an accident and dispelling the heat created by the pump motor. A sump located immediately below the elevator holds 400 gallons of surface water which enters the shaft through two weep-holes 39 feet above the pump floor. The sump pump, an Allis-Chalmers 45-gpm unit working against a 100-foot head, discharges the water to the light plant close by for boiler water. The pump is started and stopped by the elevation of the water in the sump.

The Top of the Shaft

Just below ground level near the top of the shaft a tunnel leads from the pump house to the old water works, and at this elevation the 12-inch discharge main has another 12-inch gate and also a check-valve. This would prevent the flooding of the shaft in case of a break in the riser pipe. A Builders Iron Foundry venturi meter is set in the line in the tunnel with the recording device on the ground floor of the pump house. No chlorine is applied, for the quality of the water is excellent. The only possible source of contamination would be from failure of the sump pump to operate, causing the sump to overflow into the open top of the well.

The second floor of the 16 x 24-foot building contains the elevator hoist and provides sleeping quarters for the operator, whose duties are chiefly supervisory. The building has a flat roof.

The Elevated Steel Tank

The erection of a Chicago Bridge & Iron Works elevated steel tank of 400,000 gallons capacity, located 6,100 feet from the pumping station, has made it possible to shut down the pump more frequently and to furnish a more constant pressure throughout the city. The radial cone bottom tank, shown on the cover of this issue, is a modification of one of the competitive designs offered in the nation-wide competition of this company several years ago. The tank is supported on eight cylindrical columns 33 inches in diameter and 78 feet 7¾ inches high. A balcony encircles the tank at the spring line of the bottom. The footings for the columns are 13 feet 6 inches in diameter on the uphill side of the tank, and the two footings on the downhill side are 14 feet 9 inches in diameter. Tie rods, 2 inches square, were shrunk tight after loading the columns and tie four columns. The riser pipe is 42 inches in diameter.

The design and construction of the new water works, with the exception of the elevated tank, was done by Miller Walston, City Engineer, under the direction of William R. Galt, City Manager. The plant is operated by R. M. Temple, Superintendent of Utilities.

Another Backward Step

HOPING that its collection of "backward steps" as shown in photographs will forever remain small, and serve only as warnings, THE AMERICAN CITY adds the "before and after" reproduced herewith to the one of the Chattanooga tree slaughter for the sake of billboards, presented on page 72 of the October issue.

There is, moreover, a touch of unconscious humor in the point of view of the Sherborne Urban District Council as to amenity, set forth in a recent *Quarterly Paper* of the Scapa Society (71 Eccleston Square, London, S. W. 1), from which the present views were reproduced. The Scapa Society for Prevention of Disfigurement in Town and Country was founded in 1893 as the Society for Checking the Abuses of Public Advertising. One may easily imagine the gentle smile on the face of the editor of the *Quarterly Paper* when he wrote the following:

"Under the caption 'Dorset's Reply to Scapa,' the *Advertiser's Weekly* recently published two photographs of a site at Sherborne before and after the erection of a bill-posting station. We also reproduce, on the enclosed leaflet, two photographs of the site, kindly supplied for the purpose by the United Billposting Co., Ltd. If any persons into whose hands this leaflet comes will write to us, letting us know their views as to the relative amenity of the site before and after the erection of the hoarding, we should be very glad to have them. The account in the *Advertiser's Weekly* stated that 'the Sherbourne U.D.C. was concerned about the impression created on visitors by this bleak and rather squalid wall, so they invited the Jesty Billposting Co. to erect this attractive hoarding, complete with clock, garden, and seats.'"

Perhaps some of the readers of THE AMERICAN CITY will be moved to write the Scapa Society their views as to the relative amenity in this case.

To those who are interested in the preservation of outdoor beauty and charm, is also recommended the *Journal of the Commons, Open Spaces and Footpaths Preservation Society* (71 Eccleston Square, Victoria, London, S. W. 1), now in its fourth volume.

Before

and

After

WHICH DO YOU PREFER?

Wasteful Slums into Civic Assets

The Schenectady Plan for Parking Areas and Traffic Relief as By-Products of Its Slum Clearance and Municipal Housing Authority Activities

By MILES R. FRISBIE and FRED W. FISCH
Executive Secretary, and Advisory Engineer, respectively,
Schenectady Municipal Housing Authority,
Schenectady, N. Y.

ONE of the outstanding needs of the city of Schenectady, in common with most American cities, is several well-located, modern, well-managed automobile parking areas. With the business area of the city concentrated in a small triangle with its apex at the famous "Western Gateway" bridge at the west, its base a half-mile to the east and about a half-mile in width, the combination of through motor traffic, local traffic consisting of 35,000 registered vehicles, moving in all directions, and curb parking of various durations, has produced a traffic problem of the first magnitude. It so happens, however, that certain of the slum areas are so located as to be highly desirable spots for commercial parking areas.

These districts are in the main situated along the margins of the industrial and commercial developments of the city and adjacent to the railroads. Consisting of obsolete dwellings, located along narrow streets, overshadowed by the smoke and dirt of industry and commerce, these former residential areas have degenerated into breeding places of crime, disease, juvenile delinquency and dependency. Socially disordered, such areas add excessively to the cost of special services; their antiquated structures are potential fire hazards which increase the city's basic fire rate; and their narrow streets add to the traffic problems. The environment of these areas precluded their re-use for residential purposes, and in addition they had been set up in the city plan for commercial and industrial purposes.

It is the plan of the Schenectady Municipal Housing Authority to clear these particular slum areas, to fill, grade, and surface, to fence and light adequately, and to provide suitable service stations. Incidentally, these service stations are to have ample individual lockers, which can be used by the motorist as the delivery point for his various purchases, at no extra charge, safeguarded until ready to be placed in his or her car when leaving the field. Convenient for the shopper, this service will also effect savings in store deliveries. The operation and management of these areas will be by local "Parking Corporations" which will lease from the Authority at a rental sufficient to amortize the project within a reasonable time.

With parking removed from the city streets in the business area, two additional lanes of traffic would be made available, and a $1,500,000 investment in street paving now used for parking would be put back into circulation, and, above all of this, projected costly street widenings would be forestalled.

Food Market and Bus Terminal

It is quite likely that the lack of proper food handling facilities is not peculiar to Schenectady alone. The Authority has recognized the local problem, and one of the proposed re-uses of certain slum areas is a modern, well-equipped food center, set up as a secondary food market, constructed in accordance with the state-wide plans of the New York State Board of Markets. Along with the market site it is proposed to provide dry and cold-storage warehousing, in-transit terminal facilities and sites for commission houses and wholesalers. There seems to be no doubt but that economies effected by such centralization of the food industry will have its advantages to the community.

Another proposal is the creation of a consolidated bus terminal, bringing all local, interurban, and interstate busses to a central point adjacent to the Union Railroad Station, taking the parked busses and loading and unloading of passengers off the streets and placing them under a common roof.

These few examples of the various projects set up for the re-use of the slum areas show how Schenectady is planning to convert its wasteful slums into civic assets. The financing of these projects, which are set up as self-liquidating, is being sought through the PWA.

Housing

The modern low-rental housing for the lowest income groups of the city population is being planned by the Federal Housing Division. The site proposed by the Authority is high, with clean air, yet within convenient walking distance of the principal industrial activities of the city. It is adjacent to churches, schools, parks and playgrounds, so that all religious, educational and recreational requirements may be provided for.

Housing for other income groups is to be planned, and with the completion of the initial projects now under consideration, this phase of the comprehensive program will be started.

The plans for slum clearance and commercial re-use and the plans for housing are closely coordinated and are to be carried out together in proper sequence to insure an orderly, economical, well-planned program.

The Schenectady Municipal Housing Authority feels that its broad program of slum clearance and housing has met the basic ideas of the recovery program. In addition to the eradication of non-productive slums, the "Schenectady Plan" has provided a commercial development and housing program which will help greatly in the relief of employment and, by virtue of creating new enterprise, will stimulate private expenditures and continuing employment.

The creation of the "Schenectady Plan" has been under the direction of the authors. Hon. John T. MacGathan is Chairman of the Schenectady Municipal Housing Authority, and Mrs. Willis T. Hanson, Jr., is Vice-Chairman.

Municipal Diesel Plant at Oberlin, Ohio

IN September, 1934, Oberlin, Ohio, turned on the 2,350-hp diesel plant voted by 92 per cent of the electorate two years before. The argument favoring the plant was the argument favoring all public operation: that while rates were not excessive as measured by rates in similar communities, they were high as compared with production costs. The average domestic rate was 6.77 cents, with a minimum charge of $1 per month. The franchise expired in 1927, and was renewed to 1947 with a proviso that rates be arbitrated in five years. The private utility would not meet the rates proposed by the city after a survey.

After losing an injunction suit and watching the city sell bonds, let contract, build pole lines for load, the utility filed a new schedule of rates that were 10 per cent lower than those proposed by the city. Then the Ohio Public Service ruled against the private utility schedule because of the higher rates in effect in nearby communities. Consequently, Oberlin has gathered in practically all the load.

The municipal plant, designed by City Manager L. A. Sears and Consulting Engineer Roy Husselman, is housed in a brick structure with a steel and concrete roof. The basement is full-plan and includes the foundations for the diesels. These consist of two 875-hp and one 600-hp two-cycle machine, with oil-cooled pistons. The generators are mounted on extension shafts, with the exciter rotors pressed on the ends beyond the outboard bearings.

Fuel oil of 32 degrees A. P. I. gravity, stored in outside steel tanks, is delivered to the three-day tanks by a motor-driven rotary pump. These tanks are located in the basement. The suction of the built-in fuel-handling pumps is sufficient to lift the oil and deliver it to the small reservoirs adjacent to the injection pumps. Each day tank has its separate meter, so that fuel consumption may be accurately recorded.

Air for combustion is drawn down through vertical pipes outside the building into concrete air boxes at their bases. These boxes contain air filter elements to clean the air. From these chambers the air pipe lines pass horizontally to the scavenging pumps of the engines.

The engines' water-cooled exhaust manifolds deliver the waste gases to the exhaust pipes, which drop down into the basement, and then run horizontally through the basement wall into the concrete exhaust pits. The 10-inch steel stacks from these pits are equipped with silencers.

For jacket cooling, a double-circuit system was chosen. Raw water is passed over a tower and through heat exchangers by a centrifugal pump. Make-up is taken from the city mains.

These pumps are placed in the basement, and the heat exchangers have their bases on the basement floor but extend up into the engine room.

Lubrication

Oil coolers are provided for each of the three engines, since the pistons are cooled by a flow of lubricating oil into their crowns. Coolers are placed in the water lines to the engines.

The lubricating oil is taken from the engine crank-case and passed through basket screens before entering the oil coolers. At the base of the coolers lines are run to a centrifuge which cleans the oil. In this way all the lubricating oil of a running engine is continuously purified on the bypass system.

After an engine is shut down, lubricating oil is circulated through the system, including the piston crowns, to cool the parts gradually. The circulation is accomplished by a motor-driven rotary pump. When an engine is running, the oil circulation is maintained by the engine's own gear pump.

Air for starting is stored in two tanks, 22-inch diameter by 9-foot length. These are kept charged by a motor-driven two-stage compressor, with a second compressor, belted to a gasoline engine, as standby.

An unusual feature is the control board which carries the indicator and selector switch of the pyrometers, various pressure gages, and push-button switches controlling the motors of the various pumps. Each switch has an indicating light, so the operator knows at all times which pumps are running. An electric horn also blows when unusual pressure or temperature conditions exist.

Much of the piping is placed along the building walls, with blanked ends for future extensions. A pipe color system is employed so no valve need ever be closed by mistake.

The city officials feel that to meet possible criticism the electrical frequency should be kept constant at all loads. For this reason each of the engines is provided with a special governor. These hold the system frequency to within 0.2-cycle of the 60-cycle standard. A feature of this governor is its non-drooping characteristics. In a change from no load to full load the speed change is infinitesimal.

As an additional precaution an electrical frequency control has been added to the equipment to maintain absolute constant frequency on the lines.

The plant has not been loaded to the point expected in 1933, owing to the necessity of constructing distribution lines, but in spite of this, the operating costs are within the estimates, and the plan will pay for itself out of earnings in about five years.

Principal Equipment

Engines:
Two 5-cylinder, 16 x 20-in., 875-hp and one 6-cylinder, 12 x 15-in., 600-hp Fairbanks-Morse two-cycle diesels.

Generators:
Two 606-kw, and one 415-kw, Fairbanks-Morse 3-phase, 60-cycle, 2,300-volt alternators, with direct-connected exciters.

Governors:
Woodward Governor Co.

Jacket water pumps:
Two 3-in., 400-gpm, 50-ft. head motor-driven Fairbanks-Morse centrifugal pumps.

Raw-water pumps:
Three 4-in., 600-gpm, 50-ft. head, motor-driven Fairbanks-Morse centrifugal pumps.

Heat exchangers:
Two Schutte & Koerting, rated 3,700,000 Btu per hour.

Silencers:
Maxim Silencer Co.

Fuel-oil transfer pumps:
Fairbanks-Morse rotary direct connected to F-M motor.

Meters:
Buffalo Meter Co.

Starting system compressors:
One two-stage geared to Fairbanks-Morse motor. One Fairbanks-Morse compres or belted to F-M Type "Z" gasoline engine.

The Lake Washington Sewage Interceptor at Seattle, Washington

By CHASE E. FRENCH
Sanitary Engineer, City of Seattle, Wash.

IT has been the experience of every large city, regardless of the burden of taxes already piled up, the excessive debts created, or the changing of officials, that the city's very existence depends on the proper disposal of municipal wastes; and, further, it has been found that what appeared to be the easiest method of sewage disposal has been by far the most costly. These cities now realize that if a comprehensive plan had been made and followed and if scientific methods had been adopted earlier, the first costs might have been greater but present and future taxes would have been much less.

The Problem

Seattle, like Rome, was built on seven hills. It has an area of 68 square miles, and approximately 40 miles of waterfront, with Puget Sound on the west, and Lake Washington, fresh water, on the east. As in the case of most growing communities, Seattle discharged its sewage, untreated, into the nearest body of water. Four thousand acres of very desirable view property drained into Lake Washington, and in a short time 32 independent sewer systems were constructed with outfalls extending short distances into the lake, discharging untreated sewage into from 4 to 10 feet of water. Many miles of the lake front have been acquired for park purposes and numerous municipal bathing beaches established.

Increasing residential development and extensive use of the lake for bathing and recreation made it necessary to stop further contamination of these waters. Recommendations were made to the City Council that 22 sewage treatment plants be constructed on the shores of the lake. Three of these plants were built at a cost of $115,000, and plans were approved and funds appropriated for another plant at an estimated cost of $150,000. The writer vigorously opposed a program of constructing modified Imhoff tanks in residential districts, since it would depreciate property values and eventually blight the entire lake front area. The construction of the fourth treatment plant was held up pending a report and recommendations by the writer, who had been sent to California and Oregon to investigate sewage disposal plants in those states. A report was made recommending the abandonment of sewage treatment on the lake front and favoring construction of intercepting sewers and pumping plants discharging sewage into trunk lines with outfalls in Puget Sound. This policy was adopted, and a $2,125,000 bond issue for the purpose was voted in 1926.

The Interceptor Plan

The project is divided into ten separate units with a drainage area of 8,243 acres, and provides intercepting sewers and pumping facilities to equal 10 per cent of the total capacity of the outfalls. This will intercept all of the sanitary flow and 94 per cent of the storm water, and will take care of all sewage except an average of 94 hours each year during extreme winter storms, when the excess water is by-passed and carried out to a depth of 30 feet in the lake. Certain units are completed and in operation. The first unit, known as the Hanford Street trunk sewer, draining an area of 2,938 acres, cost $1,240,000. This included one mile of 106-inch reinforced concrete tunnel under Beacon Hill, with the outfall discharging into the East Waterway.

The second unit, known as Lakeside Avenue, was completed in January, 1931, at a cost of $160,000. It consists of two plants—one at Pine Street and a booster plant at Charles Street. The Pine Street station discharges into the trunk sewer 93 feet above the plant and consists

PUMPING STATIONS ALONG THE LAKE WASHINGTON SHORE, SEATTLE

1. The entrance to the Lynn Street pumping station in this restricted residential district. The pumps are below street level. 2. The Pine Street pumping station, on the shore of the lake

of two Yeomans pumps, one 1,000-gpm driven by a 40-hp, 1,160-rpm Westinghouse wound rotor motor, and one 2,000-gpm driven by a 75-hp, 1,160-rpm wound rotor motor. The Charles Street booster plant consists of a 1,000-gpm Yeomans pump driven by a 10-hp, 575-rpm Westinghouse type CS squirrel-cage motor. It was required that control for these motors be entirely automatic and yet with adequate flexibility for non-automatic operation for test purposes. Automatic and non-automatic operations were readily obtained by means of float control in connection with push-buttons and magnetic starters for the wound rotor and squirrel-cage motors. Daily pumping data were secured by means of a meter on the control board. Cubicle type construction was selected for the control boards in anticipation of moist conditions existing in the underground plants. The control boards were equipped with space heaters to insure against excessive moisture damaging the wiring.

The third unit, known as the Charlestown Street sewer, cost $160,000, and consists of three pumping plants, namely, Rainier Avenue, Alaska Street and 46th Avenue South. The Rainier Avenue plant contains three pumping units, one 3,600-gpm Worthington and a similar Yeomans unit, also one 1,000-gpm DeLaval unit. Westinghouse wound rotor motors for these pumps are rated at 60 hp and 15 hp. The Alaska Street plant was equipped with one 1,000-gpm Worthington pump driven by a 10-hp type CS motor. The 46th Avenue South plant contains two 1,000-gpm pumps, one Yeomans and one DeLaval. These are driven by type CS squirrel-cage motors. The control boards followed the same type of construction as the Lakeside project and were manufactured by the A. G. Electric Co.

The fourth unit, known as the 43d Avenue North sewer, cost $100,000. There are two pumping plants, one at Lee Street, equipped with two Worthington pumps, one 2,000-gpm and one 1,000-gpm driven by one 60-hp and one 30-hp wound rotor motors. The Lynn Street plant was equipped with two 1,000-gpm Worthington pumps, each driven by 7½-hp induction motors. The motors and control boards are of Westinghouse manufacture.

Plans have been completed for the remaining six units, and application made to the RFC for grants and loans to complete the project as a whole. These units call for seven pumping plants and one sewage treatment plant, and will serve an area of 4,278 acres.

The lake front area served by the completed units has been freed of further contamination, and as a result the public and private beaches are used more extensively than ever before.

Major Traffic Arteries of Cities Need More Federal Aid

A STRONG plea for increased participation by the Public Works Administration in the construction of major traffic arteries of cities was voiced by Robert B. Brooks, consulting engineer, of St. Louis, at the annual convention of the American Road Builders' Association in Washington, D. C., January 23. Numerous letters on this important subject were quoted by Mr. Brooks, among them the following:

From Nathan R. Smith, of the Department of Public Works, Baltimore, Md.:

"In my opinion, every large city should have two through routes connecting the major arterial highways which are paved to the corporate limits; one a commercial highway, following the most direct possible route through or along the business and hotel district, and the other a by-pass route through the suburban section which will permit pleasure vehicles to avoid congestion and save time if they do not wish to stop in the city. These routes would be primarily for the benefit of through traffic, and inasmuch as at least 50 per cent of Federal appropriations have been dedicated to major thoroughfares, it seems imperative that the connections through the cities should be at least partly financed by the Federal Government.

"Mass passenger transportation and parcel freight movements are being carried on the state highways in larger proportions each year. Passenger bus lines, which connect all the larger cities, must have termini and service stations in the heart of the cities, as well as scheduled stops at the principal hotels. Freight and express lines must also have warehouse or depot facilities. These must be located in the business center of the cities, and the location of a through traffic artery as convenient as possible to them is essential.

"On the other hand, there is the large volume of through tourist and pleasure traffic in private automobiles which does not have time or inclination to stop in each and every city along their route, and wishes to avoid as much congestion as possible. This is especially true along the eastern seaboard, where tourists from Maine to Florida would naturally pass through Boston, Providence, New Haven, New York, Philadelphia, Wilmington, Baltimore, Washington and Richmond as well as many smaller cities, in an ordinary two-day period. The availability of a by-pass route through the outskirts of these cities is most important."

From W. A. Stinchcomb, Director's Secretary, Cleveland Metropolitan Park District:

"To one unfamiliar with the development of Federal and state legislation relating to the expenditure of Federal and state funds for highway construction within cities the presentation of reasons justifying such expenditures would seem foolish. In fact, one would naturally conclude that such expenditures were justifiable without question. The answer is obvious.

"The fact that cities have been treated like step-children in the family of political subdivisions of both state and county is but an indication of the dominance of the agrarian or rural influence in the halls of the Legislature at Washington and in the state capitals.

"At this time, when practically all the pavements originally constructed on the main arteries in cities are worn out, or have been worn out and have been replaced by the citizens of the cities, it seems decidedly unfair to ask either the city taxpayers at large, the abutting property owners, or even the state as a whole, either individually or collectively, to bear the entire burden of the cost of the widening, improving or entire reconstruction of these highways—improvements made necessary, to a considerable extent, by the increased volume of traffic imposed upon them by motor vehicles from out of the state.

"Records kept by the Cleveland Automobile Club of this out-of-state traffic, indicates that about 5,000 motor vehicles a day pass through the city of Cleveland coming from outside boundaries of the state. When one considers the great increase in the volume of truck travel originating beyond the confines of the state, and the great loads that are carried both in trucks and in trailers, the justification for the expenditure of Federal funds on main arteries through cities is further justified."

From Charles M. Reppert, Chief Engineer of the Department of Public Works, Pittsburgh, Pa.:

"The only justification for further allocation of Federal aid funds to the various states for the improvement or reimprovement of the highway system is to give employment as a part of the relief program. Unfortunately, in the past program most of this money was spent on state highways in rural districts where neither the relief load nor the number of unemployed justified such expenditure. The large communities, particularly industrial centers, contributed a greater part of the highway income received by the various states, while most of the money is spent in outlying country districts."

In conclusion Mr. Brooks quoted from President Roosevelt's recent message to Congress that "The Federal Government must and shall quit this business of relief," and added:

"The aim behind his message was to re-employ large numbers of the unemployed, tapering off the program as fast as men are re-absorbed by private business. It was stated that the projects must be useful, would create future new wealth, would provide a large percentage of direct labor, would in a measure be self-liquidating, and would compete as little as possible with private enterprise. Nowhere could Congress find projects which would better fulfill all the expressed aims of the President than by Federal participation in the construction of major traffic arteries of cities."

A Dammed River May Make a Resort

By **HENRY S. CURTIS**
Ann Arbor, Mich.

ANN ARBOR is situated on the Huron River about 50 miles from Lake Erie. Most of the valley of the river was bought up by the Detroit Edison Co. about 30 years ago for the development of power. There are eight dams on the river below or just above Ann Arbor. Of the 230 feet of fall between the top of the upper dam and Lake Erie, nearly 200 feet is utilized. The 12 miles of river that lies between Ann Arbor and Dexter, the next town above, is very intensively used. This county contains some 54 good-sized lakes, but none of them approach in popularity this section of the river.

There are three bathing beaches on the river, and almost the entire stretch is used during the warm months for picnicking, fishing and boating. The most popular drive in the country is the Huron River Drive. The high wooded hillsides above the upper dam constitute the most fashionable suburb of the city, where lots have sold as high as $4,500. A park of about 50 acres has recently been laid out in one of the wooded areas. It has many picnic tables, and they had to be engaged some time ahead during the past summer. There are only two serious handicaps to this section of the river. The Michigan Central Railroad crosses the river twice with bridges so low that canoeists must portage, and the bathing beaches would be more attractive if the dams were higher, so as to give a better shore line.

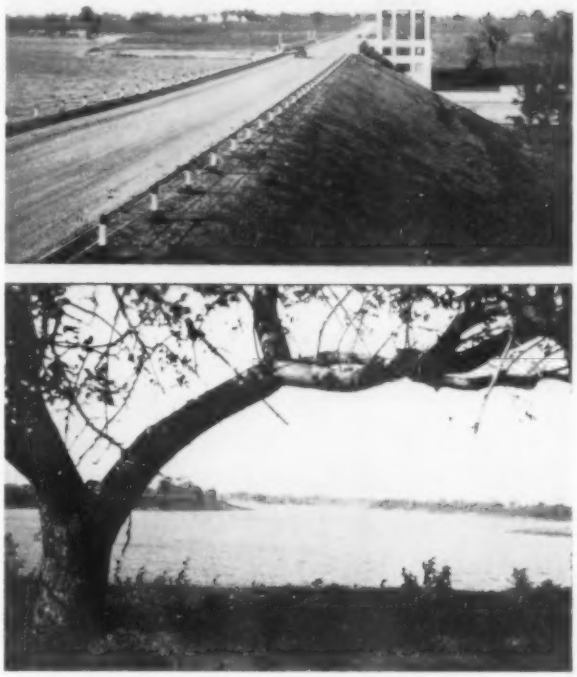
The section lying between Ann Arbor and Ypsilanti is about the same length. Ypsilanti is ten times the size of Dexter, and this stretch is from 10 to 20 miles nearer Detroit. It is quite as attractive naturally, but it is almost entirely unused on account of the sewage of Ann Arbor.

Lakeside property in Michigan that is at all suitable for resort purposes sells at from $5 to $50 a front foot. It may be well worth while to dam a river or a creek in order to make a resort. The higher the dam and the larger the lake, the more power it will develop and the better resort it will create.

Inasmuch as most lakes have an inlet and an outlet, the only significant distinction between a lake and a mill-pond is in the relative size of the stream and the pond which it produces. The larger the stream and the smaller the pond, the more it becomes a mere enlargement of the river; the smaller the stream and the larger the pond, the more closely the mill-pond corresponds to a lake. Such a lake has the advantage over the regular natural lakes that its level can be maintained at any point that offers the greatest resort and power possibilities.

Conserving Shore-Lines for Public Recreation

It is not to be expected that a company whose main interest is in the development of power will conserve all the recreational possibilities of a stream. There is every reason for saying that river borders in a populous section should be public property and should be planned as a whole. At the time a great dam is built, the water-line should be determined so as to cover marshlands and to bring the shore line along uplands where beaches and



Courtesy of H. O. Whittemore, University of Michigan

FORD DAM AND FORD LAKE (NEAR HURON RIVER DRIVE), YPSILANTI, MICH.

picnic areas may be set aside. Trees and ornamental shrubs should be planted at the water-line. Areas should be set aside for parks, residences or summer cottages, and the location of driveways indicated. If it is to be a private development, the permit should indicate the water-line at a certain level and state that not more than a foot's variation from that level would be permitted. The difference in levels between high and low water in the Edison dams on the Huron River is less than three inches. The permit should recognize the paramount interest of the public in the shore-line and waters for park and recreation purposes. Such an arrangement would leave to the power company all that it ever wished, the power, and would safeguard the public on its recreational side. A law with such requirements, or public ownership, seems the only alternative if the full recreational values of a river are to be secured.

Taking the Sewage out of the Rivers

The greatest single improvement needed by most rivers is the removal of sewage. Sewage drives away the better fish, so that few but carp remain. It makes the river dangerous for swimming and unattractive for boating, picnicking, driving, hunting and residence. It destroys val-

ues probably in excess of the cost of its disposal. Never were the words of Coleridge more appropriate than as applied to many of these rivers:

> "The River Rhine, it is well known,
> Doth wash the city of Cologne,
> But tell me, nymphs, what power divine,
> Shall henceforth wash the River Rhine?"

Sewage disposal is necessary, and the Ann Arbor plant is nearing completion, but it must not be concluded that it will cure chronic conditions at once. The accumulated filth in the river will probably wash out more or less in high water, and the winter freezing will help, but it is to be feared that the river, though greatly improved, will not become sanitary at once unless further measures are taken.

Recreation Values and Power Values

The recreation values of most rivers in populous sections are quite comparable to their power values. These recreation values are public values, and the shore-line and shallow waters of the river should be under some park authority. The power companies can now produce electricity by burning coal for less than a cent per kilowatt-hour. It may not now be worth while for them to build a dam to generate electricity, while to a city for which the recreational facilities are more important than the power it may be well worth while. In a new power development a private company may plan for the recreational and real estate developments at the time it constructs its dams, and profit by waterside areas suitable for residences or summer cottages, but it is hard to see how it may hope for any adequate return from the hunting, fishing, swimming, boating, skating, driving or park possibilities produced. The only organization that can get a full return from the power and recreational possibilities alike is the city itself. From being the main consideration in the construction of a small dam, power is rapidly becoming a by-product, with recreation as the main objective.

With the new leisure and the increasing facilties for recreation which it demands, the states should insist that all cities take their sewage out of the rivers in populous sections.

Grinding of Garbage for Disposal in Sewers

St. Louis Is Making a Careful, Intensive Study of Possible River Pollution by This Method

By **FRANK J. McDEVITT**
Director, Department of Streets and Sewers, St. Louis, Mo.

IN April, 1934, an experimental plant for grinding garbage so that it could be disposed of through the sewers was installed on St. Louis city property. The raw garbage was fed by hand into this 100-ton-per-day machine and ground up into pieces all of which would pass a ½-inch mesh screen. The machine consists of a cast iron shell in which is mounted a high steel rotating shaft. On the periphery of the shaft are pivoted a number of steel hammers which beat up the garbage into small bits. The shaft is direct-connected through a flexible coupling to a 40-horsepower electric motor.

The raw garbage has a moisture content of about 85 per cent. and during the grinding process additional water is sprayed on the mass, which further decreases the percentage of solids. The discharge from the grinder is a pipe line 15 inches in diameter which connects with a 2 x 3-foot egg-shaped brick sewer located in an alley and leading to an 8-foot 6-inch diameter brick sewer which finally merges with the Mill Creek sewer, 15 feet wide by 20 feet high, through which the ground garbage flows for about two miles before reaching the Mississippi River.

Early Operation of the Grinder

The grinder was operated intermittently over a period of several months and a careful record was made of operating costs. Present costs, including labor, light, heat, power and maintenance, are 40 cents per ton, and the initial costs were $5,610. By the addition of a receiving hopper and a scraper feed conveyor at an additional cost of $4,400, the operating cost through a reduction in hand labor can be lowered to 34.5 cents per ton, which is the same figure paid to the Hog Haven Farms for the disposal of garbage delivered to them.

Objections and Investigation

The experiments with the 100-ton plant proved conclusively to those in authority that this method of garbage disposal would work out satisfactorily for St. Louis, so plans have been made to install an additional 200-ton-per-day plant, and both machines are being equipped with conveyors and storage hoppers.

There seems to be quite a sentiment developing against this method of garbage disposal because of possible danger to aquatic life, due to the reduction in dissolved oxygen in the river water. While the Department of Streets and Sewers of St. Louis and the U. S. Bureau of Fisheries have made some tests, the data which have been collected on the subject are insufficient. We are convinced from the tests which the city has made that the introduction of ground garbage into the Mississippi River will not in any way endanger aquatic life, but in order to be sure of this, the city, beginning next February 1 when all the garbage will be disposed of in this manner, will take regular samples of garbage and determine the B.O.D. value, and also regular samples of the Mississippi River water at designated points, so that the reduction in dissolved oxygen can be checked accurately at regular intervals.

Parker Dam to Furnish Water for Thirteen California Cities

By KING HAMILTON GRAYSON

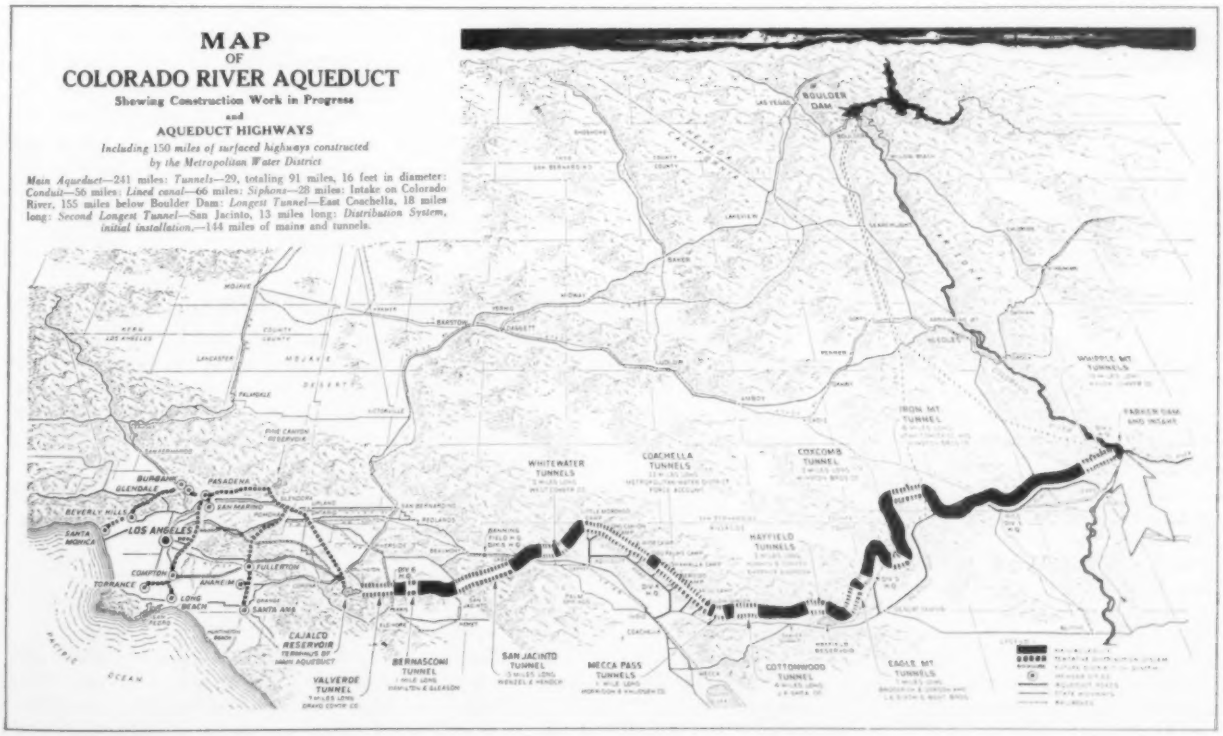
A NEW lake, some fifty miles long, will soon provide thirteen thirsty California cities with a much-needed and dependable supply of water. The reservoir, with a capacity of 717,000 acre-feet, is part of the huge Federal Government undertaking on the Colorado River.

The first work will be to start two diversion tunnels, each 29 feet in diameter to by-pass the river around the selected dam site. Parker Dam will be of concrete, arch design, 800 feet across its crest, and 315 feet high from bedrock. The maximum thickness will be 100 feet. This structure will be used primarily for the diversion and regulation of water rather than as storage, but at the same time it is the most essential link in the plan to provide the thirteen California cities with a dependable water supply. Parker Dam will raise the water level of the river 8 feet. When Secretary of the Interior Ickes accepted the bid of the Six Companies, Incorporated, for the construction of Parker Dam, he gave to the Los Angeles Metropolitan Water District the assurance of a dependable water supply to meet the steady growth of the Pacific Coast metropolis, thereby bringing to the cities of Los Angeles, Anaheim, Beverly Hills, Burbank, Compton, Fullerton, Glendale, Long Beach, Pasadena, San Marino, Santa Ana, Santa Monica, and Torrance the waters to insure future growth.

History of the Project

Twenty years ago the first water from the Sierra Nevada Mountains, 250 miles north of Los Angeles, was delivered to the city through the Los Angeles-Owens River aqueduct. As the result of the completion of the aqueduct and the utilization of the 3,200-foot fall of water along its route, came the sister development of hydroelectric power. This provided Los Angeles with a new means of inducing numerous eastern industrialists to locate branch factories in the Southern California area. At that time, it will be remembered, plans were well under way for Los Angeles to own its electric system. Early in 1917 this dream became a reality when the first electric energy was generated and distributed through the San Francisquito power plant number one. This was followed by the erection of other power plants, until today the system now provides 175,750 horsepower for distribution over its lines. The combined water and electrical development has placed Los Angeles second among those cities having their own water and electric systems.

Despite all the development that has already taken place to provide Los Angeles with a safe water supply, competent engineers insist that still more supplies must be immediately provided. They go so far in their sur-



THE INTAKE SITE OF PARKER DAM AT THE HEAD OF THE COLORADO RIVER AQUEDUCT

veys as to warn the city fathers that the Mono Basin watershed and reservoir possibilities in the Yosemite area must be added to the growing system. This they insist must be done by the end of 1936 or the city is likely to face such a serious water shortage that curtailment of water used will be vitally necessary. And the Los Angeles Department of Water and Power is now putting forth every effort to acquire the Mono Basin water to prevent a crisis within the next two years.

One of the most important links in the Los Angeles reservoir chain that is nearing completion is known as the Bouquet Canyon project. The Bouquet Canyon Dam is 55 miles north of Los Angeles. In this project both water and power are being developed. The original estimated cost was $3,000,000, but it is now known that when the project is completed the total cost will not exceed $2,600,000.

The Bouquet Canyon reservoir is the second largest lake in the entire water system of Los Angeles. This close-in-to-the-city storage provides 16,000,000,000 gallons of emergency safeguard to meet the growing demands of the western metropolis. It will probably be one to two years before the reservoir is completely filled with water. If the stream were allowed to pour in unchecked at the rate of 100 cubic feet per second, it would require only six months to fill it, but with varying conditions to be encountered, the longest estimate is two years.

Now that the water problem is somewhat solved, that of power has been solved automatically. The building of Boulder Dam has provided the promise of sufficient power at low rates to induce industry to locate in the metropolitan area.

There are 2,411 steel transmission towers built or being built, 109 feet tall, between Cajon Pass, near San Bernardino, Calif., and Boulder Dam to carry the 270-mile power transmission line. The 40 miles between Cajon Pass and Los Angeles will be spanned by 271 double circuit towers, each 144 feet tall. Across the 230 miles of desert and mountainous region, nearly 1,200 men, equipped with especially built machinery, are pushing the work toward completion by September, 1935. The electric energy which the Federal Government will be ready to release over the power lines at that date is already causing new industries to locate in the Los Angeles area.

The hazards incident to desert electric storms have caused the setting of the steel towers in rows of two, each carrying a single circuit. These are spaced 1,000 feet apart and support crossarms 65 feet wide and 90 feet from the ground. The towers on the Cajon Pass — Los Angeles end of the line are of heavier construction than those between Cajon Pass and Boulder Dam. They will each carry two circuits, with three crossarms 40 feet wide, the lowest 75 feet from the ground

The development of the various water and power projects which mean so much to Los Angeles and its citizens has a still greater far-reaching effect whan other service areas are considered. Parker Dam is indeed a lucky thirteen for the thirteen California cities involved, and the value of Boulder Dam, with its stores of industrial energy, cannot be estimated in cold dollars and cents. Each and all are of vital importance to the growth of the Los Angeles Metropolitan District, to the individual citizen, to the old and new industries.

World Center Conference to Meet in Rome

AN informal conference has been called to convene at Rome the week of April 15-23, to study the plans of Hendrik Christian Andersen as published under the title of "Creation of a World Center of Communication." Invitations have been sent to many individuals and organizations all over the world whose interests and activities are concerned with harmonious relationships of people. Among the Americans who are expected to attend are: Professor J. W. Swain of the University of Illinois, who will preside at the round table on History; Dr. Harry Elmer Barnes, who will speak on the sociological import of a world center; Professor Jean Hebrard, brother of Mr. Andersen's collaborator, Ernest Hebrard, and himself a contributor to the original plan in the department of Architecture; and Eugene Staley, of the University of Chicago, whose subject will be Economics.

The fundamental concept of this plan is that there should be a cultural center independent of all nationalities where all men may make their contribution to the advancement of humanity. Here would be housed every cultural pursuit for study, discussion and development to be given back to the world for the betterment of man.

Upon original publication in 1913, the plan for a World Center was presented through the United States Department of State to rulers and parliaments throughout the world; prominent universities and public libraries also received copies. Some forty collaborators assisted Mr. Andersen for over eleven years in the perfecting of the plan.

The conference will be held in Villa Helne, Mr. Andersen's home, where all models and research are collected. Miss Beatrice B. Beecher, Room 2303, Lincoln Building, New York, is Mr. Andersen's personal representative in America.

Two Reports Find Utility Rates High

Charges Now Compiled for All Cities of 50,000 or More

TWO government bodies reported on electric rates in February. Indeed, the joint legislative committee of New York included gas as well as power and light rates, finding them all unfavorable to the consumer. This was on February 15, and twelve days prior to this the Electric Rate Survey of the Federal Power Commission made public a set of comparative tables showing the widely differing rates effective on January 1, 1935, in the 191 cities of 50,000 or more, constituting 49 per cent of the residential customers in the United States. All communities of 1,000 or more will eventually be covered, by June 30 next.

This latter survey, under the direction of William E. Mosher, shows that cities owning their own plants charge less than do the commercial utilities. In cities of 100,000 or more having the lowest rates, this was invariably the case. In these cities where rates were highest, Jacksonville was the only municipally served city.

Taking 15 kwh as the unit, Cleveland and Columbus had the lowest rates, 60 cents, compared with the high of $1.71 at Miami. Tacoma (municipal) had the lowest rates for 100, 250 and 500 kwh, $2.40, $3.90, and $6.40, respectively. Jacksonville had the high for 100 kwh, $7; while Yonkers (private) pays $15.85 for 250 kwh and $28.35 for 500 kwh.

Typical bills show New York City paying 7.2 cents for 25 kwh, compared with 4.28 and 4.7 cents charged by the two companies in St. Louis. Philadelphia pays 6.32 and Pittsburgh 6.20 cents.

Though the survey is not of an investigative character, but fact-finding, reasons are given for the wide differences: character and density of population; geographical conditions; accessibility to fuel or water; absence of competition; inertia due to long establishment of schedules. Consequently it is suggested that caution be exercised in comparing one type of service with another. Indicating complexity, one hamlet of 27 people reported 11 schedules, and one company serving 58,000 residential customers bills them under 530 schedules. Of the 20 million domestic consumers, 13,350,000 were supplied with lighting and small-appliance service only, and use 15 to 40 kwh. Of the 5,310,000 having refrigerators, the average use is 100 to 150 kwh. Only 150,000 use current for cooking but not for refrigeration. Some 870,000 have both refrigerators and ranges, and use 250 kwh. There are 320,000 who use current for water-heating and the other purposes.

During the last six months of 1934, while the survey was under way, rate reductions were made in 60 of the 191 cities, resulting in an estimated annual saving of $5,640,000.

The New York State legislative committee has examined the four companies controlling 90 per cent of output: Niagara & Hudson Power Co.; Associated Gas & Electric Co.; Consolidated Gas Co.; Long Island Lighting Co. Said Senator John J. Dunnigan, Democratic leader and Chairman of the committee: "There is no question in my mind that gas and electric rates throughout the state will shortly be rearranged in the interest of the consumer." The report finds that "as a general rule, the costs of residential electrical energy are grossly excessive." It favors both the Washington plan, whereby profits in excess of an agreed valuation base are returned to consumers in lowered rates, and the plan of the Commonwealth Southern Corporation, under which rates are graduated in accordance with consumption.

London's Green Belt—

A Suggestion for American Cities

AN idea which is taking practical form in England and which American cities might well imitate is the reservation of a permanent "green belt" around the city of London.

At a conference of representatives of the London County Council, the County and County Borough Councils in Greater London, and the London Regional Planning Committee, held on January 22, it was announced that the London County Council was prepared to spend up to £2,000,000 during the next three years towards the preservation of a green belt of open spaces around London. The proposal is that the local authorities in Greater London shall acquire the land with the assistance of grants from the London County Council, not exceeding in any case 50 per cent of the cost and graduated according to the importance of the open space to London. The local authority would be responsible for the laying-out and maintenance of the open space after acquisition of the land.

The ideal aimed at is one that commands general approval. A constructive criticism was voiced in an interview with the *Manchester Guardian* (January 24), by Professor Adshead, the eminent architect and town planner. He said: "The immediately important thing, once the green belt scheme became practical politics, would be an Act of Parliament—it would not be easy to draft—to be pushed through to govern conditions of purchase in the contemplated zone. Then all owners on the far side of the zone should be made to pay a contribution toward the cost of the green belt purchase from which they would benefit. It would advance the development of their land from 14 to 16 years—that is to say, their ground would be immediately marketable at building land prices so many years before it would otherwise have reached that stage."

"The all-important thing," Professor Adshead added, "should be that the green belt should be pushed as close as possible to the present built-up areas, and special rates should be levied, too, on the houses on the inner side which are having the advantage of the great increase of their amenities through the creation of the public open space."

"This comment," says the English monthly, *Land & Liberty*, "indicates very clearly the economic effects of the project in raising land values on either side of the green belt. It indicates, also, how much more equitably it could be carried out if local authorities raised their revenues by land-value rating. It may also be observed that with the rating of land values in operation, public authorities would not be called upon to pay the high prices that necessarily prevail at present when so much land is held out of use for speculative prices."

Local Public Works Councils Advocated by National Resources Board

EMPHASIZING the need for more effective organization and coordination of planning for public works —local, state, regional and Federal—the National Resources Board, in its recent report to the President, offers constructive criticisms of present practices and suggestions for future procedure. To quote in part from Chapter VI of Section II of the report:

"In ordinary times over a 10-year period something like 25 or 30 billions would be expended for public works by various public agencies, 175,000 in number, local, state, and Federal. . . .

"These units, generally speaking—the United States Government (9 per cent), the state government (17 per cent), counties (20 per cent), cities (48 per cent), towns and townships, school districts—common and high—plan and construct public works without special regard to each other. A city may have a well-considered city plan, but the Federal Government may set down a post office without regard to the local design of development. The state or the county may proceed to build public works at places and in a manner inconsistent with the other local programs. The school authority may disregard the city or the county. The result is often a waste of the taxpayers' money and a public-works development unsatisfactory in type. . . .

Local and Regional Coordination

"For local and regional coordination, a state might provide for a public works council or authority on a statutory basis and equip it with broad powers either of a consultative and advisory nature, or with powers of a financial nature. In the simplest form such an authority might be given power to preview and preconsider all regional proposals for public works, and, if deemed advisable, to require reconsideration by the governmental body from which the recommendation originally came. In the amplest form a council might be given a qualified veto on local improvements of specified types, or the power to insist upon certain minimum requirements, or positive authority of its own to initiate and execute programs. It might become the construction agency of districts desiring their services, or might construct and lease improvements to jurisdictions, or operate joint utilities.

"Many states already have more or less complete laws permitting consolidation of local communities for one purpose or another—water supply, drainage, irrigation, conservancy, parks, schools, and other functions. These statutes are often inadequate, however, and could be restudied and recast with a view to the more comprehensive type of arrangement suggested here. A thorough revision of the local laws in the light of state planning possibilities as recently developed would make possible material progress in the direction of sounder works programs for many localities. For this purpose the services of the several state planning boards will be very important.

How a Public Works Council Might Function

"It has been suggested that it might be feasible to organize in many communities a public works council for consideration of the program of the community as a whole, including Federal, state, and various local agencies of government, assuming, of course, the appropriate integration of works programs with the more general aspects of local, state and national planning. Such a council might be made up of representatives from the various governments concerned and of civic or other organizations interested in the analysis of such undertakings. It might look at the program of an entire community with reference to the social utility of works proposed, their expense, their location, their style or symmetry of construction. It might consider and outline a long-time program of works, for a period of any six years, and recommend it to all of the governmental bodies involved. . . .

"Perhaps the metropolitan regions with their scores and even hundreds of independent taxing bodies offer the easiest road to the establishment of such agencies. Indeed, in cities like New York, Chicago, Boston, Los Angeles, Philadelphia, St. Louis, and elsewhere, official and unofficial regional planning associations have already been organized and have been of very great advantage at many points, even though only advisory in nature. It has been suggested, however, that another step be taken in setting up a branch dealing with the particular problem of public works as a special part of the larger and more inclusive regional interest with which these planning bodies deal. A metropolitan public-works council might be of very great value in setting up a long-time works program, in considering particular works in relation to such a program, and in making the appropriate recommendations to all the jurisdictions involved. . . .

"As one-half of the population of the United States is included in the 96 metropolitan regions having a population of over 100,000, an important step would have been taken in the direction of balanced programs of works and of master plans for the greater part of the country, if such metropolitan councils came to be the rule. This would be true whether the councils were merely advisory in character or endowed with larger legal and financial authority. If now these metropolitan councils were brought together in conference with the planning board of the Federal Public Works Administration, there would be opportunity for consideration in a large way of the public-works program of a great part of the United States. It would, of course, be possible to assemble special regions for conference with each other and with the central public works agency.

"The same principle of organization would apply with equal validity to other types of region than the metropolitan. Indeed, in the sparsely settled sections of the country, where governing bodies are often small and financially weak, concerted action in the planning and construction of public works is of the very greatest importance. These communities are usually as deficient in competent technical advice on planning and in construction as they are in financial strength. If their capacity for cooperation is equal to the emergency, however, it would be possible for them, especially with the help of the United States Government, or without as might be, to put together an organization of distinct value from the point of view of finance as well as of technical service.

"Many of these smaller governing bodies might well be brought together under some legal framework, authorized by the state, but if this is not feasible, the wide road toward cooperation is always open. State planning boards might well take the initiative in calling attention to the possibilities at this point, in aiding in the formulation of the necessary agencies, and in further relationship of the local works program to the larger planning program of the entire state."

A Patch in Time Saves Damage Suits

In Hartford, Conn., the Property Owner Constructs and Maintains the Sidewalks, But the City Keeps a Watchful Eye on Them

THREE inspectors are kept busy the year round seeing that the 350 miles of sidewalks and the 330 miles of curbs in Hartford, Conn., are in prime condition. Uneven sidewalks might be the cause of badly turned ankles or worse, and curbs out of place might cause damage to automobiles or pedestrians, and, whether the city would be held liable for these damages or not, the Street Department sees that the property owner repairs his sidewalks and curbs promptly.

The city charter holds the property owner responsible for the curbs and sidewalks as regards both construction and maintenance. He must do the work under city specifications and direction, and the work must be done by contractors licensed by the city. There are between 70 and 100 of these licensed contractors, each of whom must file a bond for $2,000 with the city before his license is given, to protect the city and to guarantee his workmanship for one year.

Daily Inspection Reports

At the end of each day the inspectors turn in a report of the work they have examined during the day, accompanied by their recommendations for work that should be done where curbs or sidewalks are not in proper repair. The card, reproduced here, shows the blocks the inspector covered during the day. These cards, which are filed after the Superintendent has gone over them, have been invaluable in court as evidence of the frequency with which the walks and curbs have been checked as to condition.

After the inspector's report of work needed has been checked by the Superintendent or his Deputy, a notice is sent to the property owner instructing him to proceed with the needed work. He is allowed twenty days in which to comply with the order. Upon his failure to do so within the specified time, the city orders a contractor to proceed with the work, and the charge becomes a lien on the property. Each day when notices are sent out to property owners the list is posted in the office of the Superintendent of Streets, where it may be inspected by any one. Contractors who are employed by the property owners to do the work are required to so note on the posted list in order that the Department may know that the owner has complied with the order. This serves as a double check and also makes it possible for the Department to allow a little longer for the work to be completed where a contractor is held up for some legitimate reason. The Department feels that the owner has fulfilled his obligation, in spirit at least, when he has given the order to a contractor to go ahead with the work, and the contractor is responsible under his bond to start work as quickly as he can and to complete it if possible under the time limit.

When it is necessary for the city to order the work done, the contractor selected, by rotation, goes over the undertaking with an inspector, who indicates the exact work to be done.

The inspection of sidewalks and curbs is one of the manifold duties of the Street Department under the direction of Leon F. Peck, Superintendent of Streets. Its other duties include the maintenance of sewers, street cleaning, snow removal, and disposal of refuse, and street construction and maintenance.

THIS DAILY REPORT IS PRINTED ON A 4 x 6 CARD

Daily Report of Sidewalk and Curb Inspector Name of Inspector	Date.....
Curb Setting Inspected or Sidewalk Laying Inspected	Work Being Done
St. or Av. between	and
St. or Av. between	and
St. or Av. between	and
St. or Av. between	and
St. or Av. between	and
St. or Av. between	and
Curb recommended to be reset or sidewalk recommended to be repaired.	(Specify)
	(over)

FORWARD STEPS

Reported by
Municipal Officials, Chamber of Commerce Executives, and Others

Pasadena's Power Plant Earns 5.8 Per Cent

PASADENA, CALIF.—This city sold $1,363,000 worth of electricity in the year ending June 30, 1934, at an operating cost of $534,989. The net profit after interest, depreciation and a general reserve deposit, amounted to $391,222. There are 31,325 meters in this city of 77,000 population, and per capita consumption is 685 kwh.

The income of the Department is $7,409 less than it was one year ago, owing in part to a curtailment in general city uses for public lighting and street lighting and a reduction in the rate per kwh for street illumination which decreased the income $4,860. The remainder of the decrease is due to rate changes which permit current to be consumed on combination rates rather than straight rates. As a matter of fact, the Department sold more current for commercial and residential lighting and power consumption. The average rate per kwh received for street lighting for 1933-34 was $0.01, while the average rate per kwh for residence and commercial lighting was $0.04053.

Owing to the rapid strides made in mechanical engineering practices, steam generating equipment has improved so rapidly that machinery and equipment which we considered to be the best obtainable ten or twelve years ago with an operative life of 20 *to* 25 *years is now so inefficient that it is considered to be poor practice to operate such machinery.* It should be remembered that machinery of this type, though it cannot be operated efficiently, has considerable value for standby uses in central stations the size of our plant. This, however, depends entirely upon how much emphasis is placed on the value of continuous service to the patrons of the utility.

INCINERATOR TO PAY FOR ITSELF

During the beginning of the fiscal year we were called on to relieve the city of a rubbish condition that had become acute, and it was decided that this Department could dispose of the waste material by converting it to steam power which could be used at the power plant. Accordingly, three of our obsolete water-tube boilers were moved from the power house to a location approximately 600 feet away, on property which had been acquired for cooling-tower purposes for the Department. Then plans for the incinerator were drawn, and the plant was constructed and put into operation in November, 1933. The incinerator is designed to handle 100 tons of rubbish a day in either of the two furnaces installed. Three tons of rubbish produces as much steam as one barrel of fuel oil.

The incinerator charges 50 cents per ton for burning rubbish. The best information we had at the beginning showed that approximately 100 tons of this material were being disposed of daily prior to the installation of this plant. However, as rubbish had been burned in open dumps without cost to the collectors, they lacked interest, with the result that the average at the start was only 15 tons per day. After seven months' operation, the average is 18½ tons. We anticipate that the increase will be more rapid next year and that the amount we receive for disposing of this material, and the credit the plant will receive for live steam used at the power plant, will compensate us for the construction of the incinerator.

B. F. DELANTY,
General Manager, Municipal Light and Power Department.

The Protection and Improvement of a Seashore Recreational Center

HAMPTON BEACH, N. H.—Progress at Hampton Beach along lines of protection, sanitation and beautification—fundamental projects first cutlined in the Manning development plan of 1932—was rapid during the year 1934. Those places along the beach front most exposed to the northeast gales have been protected against the possibility of further storm damage, and in the building of sea-walls and jetties at these points the utility of beauty has not been overlooked. Local sanitary conditions have been perfected by the installation of an Imhoff tank system. In eliminating the ocean-fall disposal method of sewage disposal, all possibility of the contamination of any part of the Hampton Beach shore-line has been done away with.

After a hard local fight on the matter of securing state cooperation to assure beach protection and to provide proper sanitation, the situation was cleared by the following action: the beach lands requiring protection were deeded by the town of Hampton to the state, in order that the state might be sure that the beach would be used solely for public park and recreational purposes forever; not to burden more heavily the taxpayers of New Hampshire, it was made a condition of the necessary legislation that the state should purchase the Hampton Harbor toll-bridge and pay the greater part of the cost of protecting the entire area out of the operating revenue received on the bridge. The bridge was purchased for $140,000, and the revenue to date, at a greatly reduced toll fee, has exceeded the estimates of the Hampton Beach precinct officials who sponsored the plan and the legislation.

The North Beach sea-wall is a white cement structure, presenting to the ocean a concave face—concave for the purpose of tossing back the waves. It rises above a protective apron of stone which slants a little toward sea-level, the apron being made of granite blocks weighing from 10 to 20 tons each. The wall rises from 8 to 10 feet above this apron on the ocean side, but is only 2½ feet higher than the street level on the boulevard side. It is 4 feet across the top.

Starting at the United States Coast Guard Station, the sea-wall extends southerly in a broad sweeping curve for a distance of almost a mile. On the boulevard side, adjacent to the wall, a 10-foot sidewalk with a granite curb has been constructed which makes an ideal promenade. The wide section between the new sidewalk and the main traveled portion of the boulevard has been filled with gravel and rolled smooth, giving the entire area the appearance of a very wide parkway.

At regular intervals apertures in the wall lead onto cement platforms from which broad stairways lead to the left and to the right from the sidewalk level to the beach sands. On the ocean side of these stairways, buttressed walls have been built which shield the apertures in the main wall and thus make it practically impossible for heavy seas to break through to the sidewalk and to the boulevard.

At intervals of 500 feet stone groins have been built which extend from the sea-wall in an easterly direction toward the low-water mark. These groins are nothing more than stone walls, the purpose of which is to catch and hold drifting sand and thus make a better beach. In all probability they will be completely covered in a few years.

For fifteen years the shifting inlet which connects the Atlantic Ocean with Hampton Harbor has given Hampton Beach the most serious problem of ocean erosion recorded on the North Atlantic coast. Hundreds of summer cottages have been destroyed. Miles of street, equipped with sidewalks, lights, hydrants and sewer pipes, have been obliterated by storms and tides. A section of White Island, embracing over 50 acres, has been laid waste and inundated at every high tide. The property damage has been stupendous, and in addition the town of Hampton has literally wasted over $100,000 by the erection of hopelessly inadequate sea-walls.

In 1932 a survey of the entire problem was undertaken by the United States Army engineers, the cost of which was shared equally by the state and Federal governments. The solution offered as a result of this study contemplated the building of two jetties for the purpose of stabilizing the shifting inlet to the harbor. And it is this solution that the New Hampshire State Highway Depart-

OCEAN SIDE OF NORTH BEACH SEA-WALL, HAMPTON BEACH, N. H.
Showing large stone blocks which make up apron, in foreground, also stairway entrances to beach, and ends of stone groins

SEWAGE TREATMENT PLANT AT HAMPTON BEACH
Double-hopper Imhoff tank on mound in rear center. Sludge bed at left of tank. One corner of trickling filter is shown in right foreground

ment decided to adopt. The north jetty is now practically complete and work on the south jetty has been started. The 50 acres of made-land north of the north jetty, formerly an eroded area, will be set apart as a state reservation for bathing and other recreational purposes.

THE IMHOFF TANK TREATMENT PLANT

It is common practice for seashore communities to empty their sewage into the ocean. In every case there is a possibility that under the right conditions of wind and tide the shore and beach may become contaminated in varying degrees with refuse or effluent discharged from the under-water end of the ocean outfall. Such a condition can never again exist at Hampton Beach, for all of the sewage of the beach community, which has heretofore been emptied into the Atlantic Ocean, will be pumped across to the west side of the marsh and treated in the recently installed Imhoff tank plant.

This plant, located in a landscaped tract of several acres of high land near the west shore of the great salt marsh, is the only one of its kind in New Hampshire and there are only a few similar systems in New England. The raw sewage is pumped into a great double-hopper Imhoff tank, which, rising nearly 30 feet in the air, forms a background for the plant layout. The effluent is discharged through cast iron pipes and nozzles onto a trickling filter bed—an immense concrete structure filled with thousands of tons of crushed rock. The effluent trickles through the bed, is collected in underdrains, settled, sterilized and discharged, free from all harmful bacteria, into a nearby creek.

The solids are digested in the Imhoff tank and discharged eventually in the form of sludge onto a bed adjacent to the tank, from which the sludge is carted at intervals to be used as fertilizer. The process is completely automatic and is carried on without the slightest odor permeating into the surrounding atmosphere. The plant has been built large enough to take care of the tremendous mid-season demands of the Hampton Beach of the future, so that today it has a capacity adequate to care for the needs of any city in the state with the exception of Manchester.

The next steps in the development plan include a new arched bridge of cement over the Hampton Harbor inlet; a traffic by-pass in the form of a 100-foot parkway built just west of the present north-and-south traffic arteries, and tremendous areas of public parking spaces.

JAMES W. TUCKER,
Secretary, Hampton Beach Chamber of Commerce and Development Council.

The Sioux City Bandshell

SIOUX CITY, IOWA.—One of the dreams come true is Sioux City's music pavilion. Visualized in a drawing submitted for the First Preliminary to the Beaux Arts prize and designed for a specific site, by Henry L. Kamphoefner, architect, of Sioux City, the plan for the structure won a second mention. The drawing was later exhibited in an art gallery in this city, and still later, CWA and FERA constructed the pavilion. Only minor changes had to be made by the architect, for the imaginary site was almost exactly the actual one.

Reinforced concrete with Atlas White finish is the material for this monolith, which is 102 feet wide and 31 feet high from the front grade. In the rear are four dressing rooms, toilets, offices and storage room. Under the arch and in the bottom of a pool in front of the base colored lights are concealed. The decorative cast concrete sculpture is the work of Herschel Elarth, a sculptor of Omaha. There are 6,000 seats in the natural amphitheater, and 4,000 more can be erected in the available space. The acoustics are almost perfect. Even in the last rows the softest tones of the Sioux City Municipal Band are clearly heard.

The photograph gives an excellent idea of this well-balanced, graceful structure, which is preeminent among CWA work in Iowa.

L. N. HINTGEN,
City Engineer.

Photograph by courtesy of Henry L. Kamphoefner, Architect, Sioux City
THE MUSIC PAVILION AT SIOUX CITY

Dentistry on Wheels for School Children in Rural Los Angeles

LOS ANGELES, CALIF.—To bring dental and medical aid to school children in outlying districts of Los Angeles, the city school system has established a unique type of health service in a traveling healthmobile which brings efficient, prompt, and often free service to the schoolroom door.

Two of these traveling health units, said to be the only vehicles of their kind in the country, are in use, traversing thousands of miles yearly. Conceived by Dr. Sven Lokrantz, Director of Division of Health Service in the city schools, the first healthmobile was put into use nearly nine years ago. Since that time another unit has been added and a duplicate of the ambulatory clinic constructed for use of the children in Norrland, Sweden. The traveling healthmobiles have been found invaluable in caring for indigent and physically defective school children in districts where it has not been practicable nor economical to establish permanent clinics.

The healthmobile is adapted for truck or trailer chassis, although the present models are hauled by truck to the various schools, where they are stationed for short periods. The vehicle consists of a small house built on a truck chassis. In this house space is provided for dental work, orthopedic work, nose and throat treatments and mental hygiene. In a corridor-like arrangement eyes are examined and tested for vision. Glasses are fitted here.

As Los Angeles covers an area of 444 square miles, the mileage per year is considerable. Units are moved to various schools, following a definite schedule. A camp is established at each school or group of schools, and the work is finished at each place as quickly as possible. The length of time spent at each camp depends upon the number of cases and the location, and is usually from two to six weeks at the most.

If social servicing discloses that these junior patients are unable to pay even the small charges of 10 or 25 cents a visit, the service is rendered free of charge. All fees collected are turned over to the Parent-Teacher Association of the city. Nearly $250 in such fees, representing collections from the two units, was taken in during one year and turned over to the Association.

The cost of single units is approximately $4,000, which includes complete equipment and incidentals. Operative costs, covering salaries of dentist, oculist, assistants, motor maintenance, transportation and other incidentals, average about $3,000 annually. Constructed of well-seasoned oak, each unit is equipped with double floors covered with heavy battleship linoleum. Roof and side walls are insulated to prevent any possible shifting or sagging.

Each healthmobile is provided with dental chair, eye clinic chair, instrument case, swinging instrument rack, eye charts, dental motor, floor covering, built-in shelves, built-in desk, hose, set of eye lenses, and other accessories. Dental work is under the direction of Dr. Verne L. G. Wilt and constitutes the major portion of service rendered.

S. A. LEWIS.

THE LOS ANGELES TRAVELING HEALTHMOBILE BRINGS FREE DENTAL SERVICE TO CHILDREN IN OUTLYING COMMUNITIES OF THE CITY SCHOOL SYSTEM

INTERIOR OF THE HEALTHMOBILE, AS FULLY EQUIPPED AS ANY WELL-REGULATED DENTAL OFFICE

Texas City Adopts Uniform Crime Records

EL PASO, TEXAS, is the latest city to adopt the Uniform Crime Record system prepared by the International Association of Chiefs of Police for the United States Department of Justice, according to the January issue of the *Police Chiefs' News Letter*. The Texas city joins approximately 100 other cities of the country which have installed this detailed record system within the past few years. As short a time as four years ago not more than a dozen cities kept accurate records of local crimes.

Police departments which keep up their reports under the Uniform Crime Records system require their officers to write down every activity on each case they investigate. These daily reports enable local police officials to analyze what, where and how crime is being committed and the percentage of cases cleared by arrest. Monthly reports, made up from the daily record, are sent to the United States Department of Justice, which receives crime data from over 1,700 cities for a composite record of all crimes known to the police.

"If more cities adopted the Uniform Crime Record system, the Department of Justice records might easily be made more complete," comments Donald C. Stone, Assistant Director of the committee which set up the system. "It would also bring about more scientific police administration in local units of government and aid in furthering police cooperation on a national basis."

TRAFFIC CONTROL AND FACILITATION

Conducted by Publications Committee, Institute of Traffic Engineers, 175 Fifth Ave., New York

Paul L. Green, Chairman; Melvin J. Bankhead, James R. Guthrie, T. T. McCrosky, D. Grant Mickle, Robert A. Mitchell, Edward J. O'Meara, Miss I. K. Rolph, Peter J. Stupka, J. C. Vincent, John C. Wrighton

Speeds Reduced in Providence, R. I.

THE fatality rate in Providence in 1934 was the lowest in all the years since modern traffic problems have existed. It is believed that the activity herein described was one of many which have contributed toward this result. Certainly, if speeds can be consistently held down or reduced, there is small doubt that accidents will be decreased.

Traffic authorities in Providence decided in 1932 that a plan of monthly "sampling" of vehicular speeds by actual measurements be carried out, covering about 54 locations, none of which should be in congested traffic. This system was worked out and tested in that year, and has been in full operation during 1933 and 1934. The purposes of the plan were mainly as follows: (1) to give authorities a more definite picture of the driving habits of operators in respect to speed at these locations; (2) to make available information regarding changes in speed, resultant from police activity or other causes; (3) to enable traffic officers to give prompt attention to locations where for any reason speeds were found unduly increasing, or out of line with safety requirements.

None of the observations was made at night or in rush hours, nor under bad weather or street conditions. The measured course was 300 feet, usually centered on an intersection. Speeds of all vehicles passing over the course during the period of observations were measured, except (a) any which pass while the observer is measuring the speed of another, and (b) those whose movement is impeded by traffic or other conditions confronted during their passage through the measured course. Tally cards of convenient form were used, and office cards for each location were maintained covering a year's observations by months. These observations, plus a system of checks on "Stop-sign" observance, required one man's time for approximately seven days each month. The number of vehicles whose speed was thus measured and recorded was 31,620 in 1933 and 34,200 in 1934. The average of all the measured speeds was 25.44 in 1933 and 22.98 in 1934.

When the routine of speed measurements was set up, it was recognized that its usefulness depended largely on its prompt and effective utilization by traffic patrol forces. Arrangements were made to get the information to traffic headquarters before the end of the day when a given location was measured. Conferences were held to determine upon the most useful form in which the information might be supplied to the police. As a result, the system of dividing the vehicles observed into "speed groups" was adopted, and an arbitrary division was made of the number (or proportion) having speeds:

At or under 20 mph
Over 20 and including 25 mph
Over 25 and including 30 mph
Over 30 and including 35 mph
Over 35 mph

This manner of presenting the results has appeared quite satisfactory. The monthly results for 1933 and 1934 are shown on the chart, and present this rather striking record of achievement:

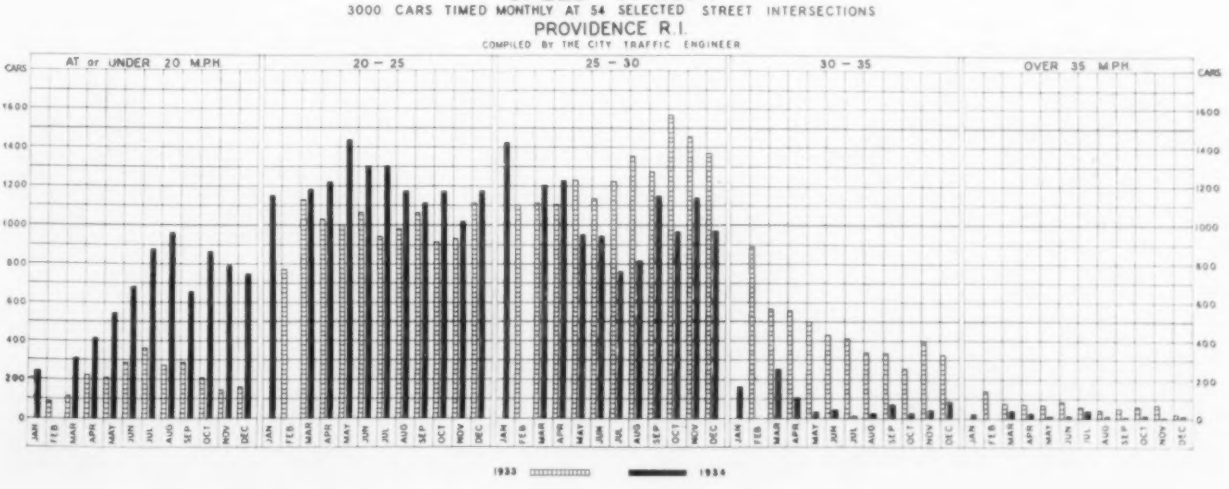
1. The proportion of vehicles going at or under 20 mph, as well as of the speed group of 20-25 mph, has shown a definite and material *increase* for each month of 1934 over the corresponding month of 1933.

2. The proportion of vehicles in the intermediate group going at 25-30 mph showed an increase in the early months of 1934, changing to a decrease in the latter months.

3. The proportion of vehicles in the two highest-speed groups shows a definite and marked decrease for all months of 1934, and for the year 1934 only 3.2 per cent of vehicles whose speeds were measured had speeds over 30 mph against 17.4 per cent in 1933.

As to the methods by which the speed reduction was accomplished, it is stated that the traffic patrol and supervision were more intensive than ever before, and could, by use of the information gathered, be more effectively directed to points where and when the need existed. It is believed that the public attained an increased realization that in their operations they were under definite supervision. Warnings, with explanations of the danger of various driving practices, were freely used, and a large number of personal interviews was had by superior officers with operators of whom reports indicated the need for such handling. Public reaction to such interviews is reported as being excellent.

As to whether the results described are



likely to be permanent, the value of any answer depends on the accuracy of the assumptions made. To the degree that these results depend on intensive traffic patrol and supervision, it may perhaps be assumed that if such activities are relaxed there may be some measure of reversion to former conditions. On the other hand, it may be that in time the driving habits of the public can be so changed that some substantial reduction in patrol and supervision could be made without great effect. On this point a rather interesting condition may be noted by a study of the September records on the chart. For the most of September, 1934, traffic work was reduced to a low minimum due to emergency conditions resultant from the textile strike. An examination of the chart shows clearly that the trend indicated in other months, before and after, was definitely less marked in September, 134.

Auto Testing Law Upheld in Des Moines

VALIDITY of the Des Moines compulsory automobile testing ordinance was upheld in a decision by District Judge Shankland on February 6, according to a press dispatch. The Judge denied a petition by J. J. Wagner, Southern Surety building manager, for an injunction to restrain the city from enforcing the ordinance or operating the municipal testing station.

Citing the "principle of the rule of reason, as laid down by the Supreme Court of the United States," the Court held that the ordinance did not conflict with the state law governing motor vehicles, was reasonable in its classification, and was not unauthorized by the Legislature as contended.

"The record in this case shows," Judge Shankland stated, "that 29,900 people were killed and 850,000 injured in 1933, and that 36,000 were killed and more than a million injured in 1934, a death rate of 100 per day in the United States from automobile accidents alone, and that more than 50 per cent of these accidents were a result of inadequate or defective equipment.

"There is no way to determine whether or not a motor vehicle is adequately equipped as required by the state laws except by inspection by experts supplied with the equipment to make such inspection. This the city of Des Moines has undertaken to do."

Protection of the public was cited as the object and spirit of the state motor-vehicle law, with which Judge Shankland said he found "nothing in the ordinance in question to conflict."

As a possible unreasonable feature of the compulsory testing ordinance, the Court referred to the provision requiring inspection of automobiles continuously using the streets of Des Moines and excluding those of non-residents using the streets occasionally.

President Gravely Concerned Over 36,000 Traffic Deaths

THE automobile casualty toll for 1934 was 36,000 persons killed in 882,000 personal-injury collisions on streets and highways, according to The Travelers Insurance Co. Pedestrians accounted for 44 per cent of the fatalities.

The death gain was 16 per cent against an increase of only 6 per cent in registrations and gasoline consumption. Fast driving is given as the dominant factor. Alcohol is known to have figured with 3.16 per cent of the drivers and 4.46 per cent of the pedestrians, compared with 2.43 and 2.99 per cent respectively in 1933.

Despite figures indicating that nine out of ten cars involved in accidents were in good condition, three out of every four cars inspected were found to be defective, says the report. Defects were as follows: brakes bad on 29 per cent of the cars; tires fair to poor on 56 per cent; lamps needed adjustment or replacement on 63 per cent.

The most serious aspect, in evidence for a number of years, was the greater number of accidents during periods of dusk and darkness. In the daytime, 6 A. M. to 6 P. M., there were 15,050 deaths in 459,510 accidents. During darkness, 6 P. M. to 6 A. M., there were 20,950 deaths in 422,490 accidents.

Showing that careful driving is possible, accidents were proportionately fewer in rainy and snowy weather and on wet, snowy and icy surfaces than in clear weather and on dry surfaces.

On January 25, President Roosevelt sent the letter quoted below to every Governor:

"I am gravely concerned with the increasing number of deaths and injuries occurring in automobile accidents. Preliminary figures indicate that the total of these losses during the year 1934 greatly exceeded that of any previous years. We should, as a people, be able to solve this problem which so vitally affects the lives and happiness of our citizens.

"In order to assist in this, the Federal Government, through the Secretary of Commerce, has taken the leadership in developing remedial measures. Proposals for uniform state legislation have been worked out by the National Conference on Street and Highway Safety, with the cooperation of responsible state officials and representatives of interested organizations from all parts of the country.

"The remedies that need to be applied are thus available in form which appears to meet the unanimous approval of experienced judgment. The responsibility for action rests with the states."

Two-Filament 25-Watt Traffic Lamps Used in Baltimore

THE Police Department of Baltimore, writes Charles D. Gaither, the Commissioner, "since March 13, 1934, has been using a special 25-watt double-filament lamp and patented lens in automatic signals throughout the city. The experiment has been very satisfactory and has resulted in reducing cost of operation by decreasing electric consumption."

The particular virtue claimed for this type of lamp by the patentee, Charles Adler, Jr., Maryland and Pennsylvania Building, Baltimore, is that on failure of either filament, the appearance of the signal lens tells traffic men what has happened and thus indicates the need for a new lamp in advance of complete failure of the light.

The two filaments in the lamp are placed parallel to each other and are separated by a metal screen. When one burns out, the screen divides the lamp into bright and dark portions which show on the lens. The remaining filament keeps the lamp in operation.

The lamps are available in either 60 watts or 25 watts, the latter being designed for use in conjunction with "Color-Design" lenses, which direct all the beams parallel to the traffic lane.

In the concave side of each color lens is a narrow band made of small prisms, which are placed horizontal in the red lens and vertical in the green. The result in the light is a wide horizontal spread of the red, and a broad vertical or downward spread of the green. The amber lens throws the light downward and to one side of the signal, so as to be visible to drivers about to pass into the intersection. The value ascribed to these prismatic bands in different position is twofold: the indications can be read by the color blind and are generally more distinctive.

"Alcohol Laws" in Pennsylvania

ACCIDENT analyses in Pittsburgh, the state of Pennsylvania and the nation as a whole show a definite increase in the number of motorists "under the influence of liquor," "had been drinking," or "apparently intoxicated" involved in accidents, reports the Better Traffic Committee of Pittsburgh. Accident reports list the part liquor plays in accidents under these varying headings. The drinking driver and the tipsy pedestrian are both playing definite rôles in the upward trend of highway accidents. While the percentage of such persons involved in all accidents is small, the problem is becoming increasingly serious and demands attention and remedial action. Every intoxicated driver should be arrested and punished.

The Bureau of Traffic Planning analysis of 1930 for accidents indicates that 4.7 per cent of 7,998 drivers involved in accidents and 7.1 per cent of 1,690 pedestrians injured had imbibed.

The Bureau of Motor Vehicles reports that in 4.3 per cent of 52,157 accidents analyzed during 1934 an "apparently intoxicated" driver was involved, and that 8.2 per cent of pedestrians involved in 12,612 accidents were "apparently intoxicated."

The National Safety Council, summarizing available reports from a number of cities and states, estimates that "had been drinking drivers" in fatal accidents increased 29 per cent and pedestrians 53 per cent last year over 1933. In non-fatal accidents, drivers reported "under the influence of liquor" increased 50 per cent, while pedestrian increases, under the same circumstances show 64 per cent. Available national statistics indicate that from 5 to 10 per cent of drivers and pedestrians in fatal accidents last year "had been drinking."

Three remedies are available in Pennsylvania at the present time for warring on the intoxicated driver: (1) arrest and fine or imprisonment; (2) suspension of license; and (3) Financial Responsibility Act. As the law now stands, conviction of driving while intoxicated carries with it suspension of license, which, in turn, brings the party within the provisions of the Financial Responsibility Act, requiring the party to carry insurance or otherwise furnish proof of financial responsibility to "pay for his accidents" before the suspended license will be renewed. The latter two remedies may also operate independent of the first.

Driving while intoxicated is generally classified as a felony or misdemeanor. In Pennsylvania and other common law states the offender cannot be convicted by a police magistrate but must be held for court. This involves indictment by Grand Jury and trial by jury by the County Court of Record (the Quarter Sessions Court of Allegheny County). The procedure is long and expensive. Satisfactory evidence is hard to obtain. The penalty by law in Pennsylvania for driving while intoxicated is a fine of $200 and costs of prosecution, or imprisonment for not more than three years, or both.

While Pennsylvania specifies a fine of $200 as the only fine in such cases, the majority of states set both minimum and maximum fines. In 15 states no minimum is set for the first offense; 18 states set $100 as the lower limit. The maximum fine for first offense is $500 in 16 states and $1,000 in 13.

In 19 states, including Pennsylvania, the optional jail sentence may be as little as one day for first offense; in 17 states the minimum jail sentence is 30 days. The maximum jail sentence for first offense is six months in 12 states and one year in 14 states.

Although Pennsylvania makes no distinction between first offense and second offense, the majority of states make a distinction between first and subsequent offenses. In 29 states a jail sentence is mandatory on second offense, and 19 states set $1,000 as the upper limit for fines in such cases.

The Fourth National Conference on Street and Highway Safety, meeting in Washington, D. C., in May, 1934, recommended a fine of from $100 to $1,000 or from 10 days imprisonment to one year, or both, on first offense. On second offense the recommendation was a mandatory jail sentence of from 90 days to one year, and, in discretion of the court, an additional fine not to exceed $1,000. In addition, the revocation of license for driving upon conviction is recommended as mandatory.

Pennsylvania, along with 30 other states, makes revocation of license mandatory for conviction of driving while intoxicated. Seventeen states, including Pennsylvania, require that proof of financial responsibility be shown before the operator is again permitted to operate a vehicle.

Harvard Bureau Receives A. A. A. Gift

THE Bureau for Traffic Research of Harvard University has announced two distinct acquisitions: a substantial gift from the American Automobile Manufacturers Association; and Maxwell Halsey to be Assistant Director. The significance of the donation lies not only in the wider opportunities for factual study, but equally in the mere fact that the organized automotive industry has decided to sanction such a study. The constructive attitude of the Association toward the solution of serious problems of safety and congestion is evidenced by the appointment as Chairman of its Street Traffic Committee of Paul G. Hoffman, founder of the Bureau of Street Traffic Research at Harvard University.

The Bureau's plans for expansion include the perfection of its Limited Way street developed in Chicago in 1931-33 on the principle of one-way free-way traffic with no grade crossings; the bringing to date of the Manual on Traffic Engineering and Administration Practices that was issued in 1926; and the probable award of two fellowships in the art. Dr. Miller McClintock is the Director. The new Assistant Director, Maxwell Halsey, who will have charge of the technical work, was formerly Traffic Engineer of the National Bureau of Casualty and Surety Underwriters and is highly regarded as a consultant on traffic problems.

Traffic Engineering and Engineers

THERE was no real traffic regulation or traffic engineering, as we use those terms, before the present century. In fact, we might begin with the first traffic control or "stop and go" signal at 105th and Euclid Streets, Cleveland, in 1914, and the first traffic signal system in Salt Lake City in 1917 and on Fifth Avenue, New York, in 1920. Another early traffic engineering device was center lines on highways, used soon after 1920. As usual, traffic engineering preceded traffic engineers. That is, work of this sort was first begun by highway engineers, city engineers, city planners, and police officials, who little thought what a great oak would grow from the acorn they planted. Pittsburgh established the position of Traffic Engineer in 1925; Chicago's present Traffic Engineer started this type of work as early as 1915, though without the title until 1926. It is always difficult to take a census in a field so rapidly changing, but today there are about 25 cities and states in which some person has the title of Traffic Engineer, and at least 50 others in which the traffic engineering function is definitely recognized as a part-time job of some one in the city engineering or other department or the state highway department, or a part-time consultant. The Institute of Traffic Engineers, founded in 1930, now has 87 members and associates, whose traffic engineering work is near enough to full-time to meet the high standards of this small but active professional society.

The functions of the traffic engineer may be stated either in terms of what he does, or in terms of his relations with other engineers and officials. In plain prose, what the traffic engineer does is to record and analyze the volume, accident experience, and other characteristics of traffic, in the entire city or state and at particular points which seem to require attention; and from such data, through his own experience and that of others, to determine what measures will make the traffic move more smoothly and more safely. Such measures may include major street or highway developments, minor improvements such as repaving or rounding corners, traffic control devices such as signs, signals, islands and pavement markings, general or special regulations such as speed restrictions, one-way streets and the like, enforcement measures such as a greater or a different use of police officers, and educational programs of many kinds. The traffic engineer then advises on the application of these measures, if he does not actually execute them. He often installs and maintains the signals and signs, and he may direct all or some of the educational work which is so necessary a complement to the engineering and legal remedies. In the state, the traffic engineer is a member of either the highway or the motor vehicle department. In the city he may report to the commissioner of public works or city engineer, or to the director of public safety.

The need today has been conservatively described by the Traffic Engineering Committee of the National Safety Council as follows: A regularly organized traffic engineering department with one or more full-time men, in every city of 250,000 population or more; in cities below 100,000 the definite designation of some member of the city engineering department (or possibly a consultant to be responsible for traffic engineering work; in cities between 100,000 and 250,000, either the former or the latter, depending on conditions.

Excerpt from a paper presented by SIDNEY J. WILLIAMS at the City Planning Division of the American Society of Civil Engineers, January 17, 1935.

All over America, traffic safety has the spotlight! The tide has turned from indifference to determined ACTION. City after city has installed or is about to install, a Municipal Safety Line, with compulsory inspection.

And Bendix, pioneer and world-leader in the advancement of motoring safety, presents the most efficient Municipal Safety Line equipment ever devised . . . the new Bendix Civic Safety Clinic.

A car off the line every minute!

The new Bendix Civic Safety Clinic tests brakes—not only equalization, but the exact *stopping power* of each brake! It tests wheel alignment—each wheel separately and accurately. It tests headlights for level, focus and strength. Big, easily read dials let the driver *see* the results as they're copied down. Approved by every safety authority who has ever examined it. Endorsed by car factories, who employ similar Bendix equipment to test new cars before shipment.

Compulsory Municipal Inspection is the only answer!

Many car owners simply *won't* have their cars inspected unless compelled to do so . . . and they are the very ones whose cars are most dangerous. Compulsory municipal inspection is the answer, and it's being adopted all over the nation. A small fee makes the purchase of the Bendix Civic Safety Clinic self-liquidating. Write for full details, prices, tested plan of operation. Use the coupon.

New BENDIX CIVIC SAFETY CLINIC

BENDIX PRODUCTS CORPORATION
401 Bendix Drive, Dept. A-3, South Bend, Ind.
Send me at once full details about Civic Safety Clinic Equipment, prices, operating plan, etc.

Name.....
Address.....
City.....*State*.....
Business or Profession.....
☐ City Official (title).....Dealer ☐

Water Rates and Service Charges, Installation Charges, Hydrant Rentals and Sprinkler Costs—XI

Abstracts of Water Department and Company Reports

Endicott, N. Y.

Population	20,000
" served	25,000
Number of services	5,000
" " meters	5,000
" " hydrants	320
Miles of water main	64.0

Inasmuch as the Endicott Water Works Co. supplies water both inside the village of Endicott and to the West Endicott Fire District and also outside the village and the Fire District, there are two sets of rates:

RATES INSIDE VILLAGE AND FIRE DISTRICT

		Gross	Disct.	Net
First	5,000 cu. ft. per quarter per 100 cu. ft.	20c	2.0c	18c
Next	5,000 " " " " " " " "	18.5c	0.5c	18c
"	20,000 " " " " " " " "	14c	0.5c	13.5c
"	70,000 " " " " " " " "	9c	None	9c
"	100,000 " " " " " " " "	7.2c	"	7.2c
All over	200,000 " " " " " " " "	5.4c	"	5.4c

RATES OUTSIDE VILLAGE AND FIRE DISTRICT

First	1,000 cu. ft. per quarter per 100 cu. ft.	25c	2.5c	22.5c
Next	3,870 " " " " " " " "	20c	2.0c	18c
"	5,120 " " " " " " " "	18.5c	0.5c	18c
"	20,000 " " " " " " " "	13.5c	None	13.5c
"	70,000 " " " " " " " "	9c	"	9c
"	100,000 " " " " " " " "	7.2c	"	7.2c
All over	200,000 " " " " " " " "	5.4c	"	5.4c

The minimum charge inside the village and Fire District is $2.00 per quarter, with a discount of 10% allowed if the bill is paid within 10 days. Outside the village and Fire District the minimum charge is $2.50 and the discount is the same.

All applications for water service must be made by the owner or authorized agent at the office of the Water Company. All connections to the street mains are made by the Water Company with the extension to the curb, the cost being paid by the applicant.

There is no sprinkler charge made for private sprinkler service, since all such lines are metered. The hydrant rental charged to the city and water district is $25.00 per year per hydrant.

EARL J. GRIPPEN,
Superintendent, Endicott Water Co.

Ashland, Ohio

Population	11,000
" served	Unknown
Number of services	3,300
" " meters	3,200
" " hydrants	255
Miles of water main	35.0

All water furnished by the Water Department of the city of Ashland, Ohio, is supplied at the following metered water rates: Minimum charge $8.00 per year, payable quarterly, in advance, $2.00 each quarter. This advance payment covers an allowance of 750 cu. ft. of water for use during the next 3-month period. Meters are read just prior to collection periods, and all water used during the previous 3 months over and above the 750-cu. ft. allowance is figured and billed at the following rates:

First	2,000 cu. ft.	26c per 100 cu. ft
Second	2,000 " "	23c " " " "
Third	2,000 " "	21c " " " "
Next	10,000 " "	18c " " " "
"	14,000 " "	14c " " " "
All over	30,000 " "	10c " " " "

Water bills are due on the first of the month billed, and if not paid by the 15th of the month in which they are due, a penalty of 10% is added to the total amount of the bill. If not paid by the 17th of the month, water is shut off without further notice and a charge of $1.00 added, all of which must be paid before water will be turned on.

Property owners or their authorized agents desiring service connections must make application at the office of the city water works and deposit the sum of $18.00 if the service is to be laid in an unimproved street, or $30.00 if it is to be laid in an improved street. If, however, the tap is larger than ¾", an additional charge is made to cover extra material and labor. Service pipe laid from the curb box to the consumer's premises must be furnished and maintained at the expense of the property owner, but the Water Department maintains and keeps in repair all lines from the city main to the curb box.

The Water Department supplies all meters up to ¾" without charge. If a larger meter is required, it must be installed at the consumer's expense. Where a meter cannot be conveniently and safely located within a building, the consumer must construct a meter box or vault of concrete or other suitable material in a place approved by the Water Department.

Applicants for connections to the city's mains for obtaining a supply of water for automatic sprinkling systems must furnish full information concerning the installation to the superintendent. Rates are quoted upon each application.

A. H. KENNELL,
Superintendent, Water Department.

Hudson, N. Y.

Population	12,500
" served	Unknown
Number of services	2,400
" " meters	250
" " hydrants	250
Miles of water main	33.0

The rates for water used for commercial purposes in Hudson are 60c per 1,000 cu. ft., or 8c per 1,000 gals., and for water supplied outside the city of Hudson, $1.50 per 1,000 cu. ft., or 20c per 1,000 gals.

A charge of $5.00 is made for the use of a fire hydrant.

JAMES MCCLURE WARDLE,
City Engineer.

Lockport, N. Y.

Population	25,370
" served	Unknown
Number of services	6,000
" " meters	5,000
" " hydrants	800
Miles of water main	80

For residences and stores, the minimum rate is $6.00 for 25,000 gals. per year. All water over 25,000 gals. per year is charged at the rate of 15c per 1,000 gals.

For factories and all other commercial users, the rates are:

First	10,000 gals.	16.5c per 1,000 gals.
Second	10,000 "	11.55c " " "
Third	10,000 "	8.25c " " "
All over	30,000 "	3.5c " " "

For non-resident users the rates are 50c per 1,000 gals.

Services are installed and owned by the property owners. All water rates are payable within 30 days, after which a 10% fee is added. All unpaid water bills are a lien against a property.

The minimum rate for non-residents is $25.00 per year. All fire hydrants are charged at $25.00 per year each, not metered, outside the city limits, but within the city there are no hydrant rentals or sprinkler service charges.

L. J. HOOKER,
Superintendent, Lockport Water Works.

"WE CAN'T TAKE CHANCES —THAT'S WHY WE USE GOODRICH SILVERTOWNS"

~ Says Fire Chief Hensley

NEW GOODRICH TRUCK TIRE PROTECTS AGAINST BLOW-OUTS—COSTLY ROAD DELAYS

Chief Burras Hensley of the Ashland, Ky., Fire Department.

WHEN the siren screams on the fire engine, seconds are precious. The fire apparatus *must* get through in double - quick time! Just think what might happen if a tire blew out!

In your business, too, truck tire failures are costly. The sidewall "Failure Zone" is stealing money from truckers every day—every minute. Most truck tires taken out of service prematurely are damaged right in the sidewall.

You can't see a break coming because it works from the inside out. You get no warning. Suddenly there is a BANG! The tire is flat! The casing ruined. Truck and driver lose time.

Wouldn't you like to end that kind of grief?

Well, Goodrich has a new kind of tire—a tire with a sidewall that is just as strong as the tread! The reason is Triple Protection. The tire is the Triple Protected Silvertown!

Why not take a tip from Fire Chief Hensley, who says, "We can't take chances . . . that's why we use Goodrich Silvertowns." If you want to play safe, get the tire with this 3-way protection:

1 PLYFLEX—a *new*, tough, sturdy rubber material with greater resistance to stretch. A layer of Plyflex in the sidewall prevents ply separation—distributes stresses—checks local weakness.

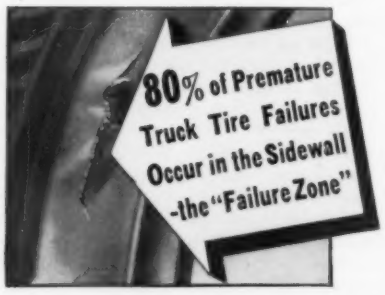
2 PLY-LOCK—the new Goodrich way of *locking* the plies about the bead. Anchoring them in place. Positive protection against the short plies tearing loose above the bead.

3 100% FULL-FLOATING CORD —Each cord is surrounded by rubber. With ordinary cross-woven fabric, when the cords touch each other, they rub—get hot—break. In Silvertowns, there are no cross cords. No friction.

This Costly Invention Costs You Nothing

Every Triple Protected Silvertown costs *more* to manufacture. But you don't have to pay one cent extra for this amazing tire!

FREE! Trucker's Handbook! Every trucker, every driver should have this big 44-page book. Gives commodity weights, load schedules, tire and truck data. Write for free copy. Dept. T-29, The B. F. Goodrich Company, Akron, O.



Goodrich *Triple Protected* Silvertowns

SPECIFY THESE NEW SILVERTOWN TIRES FOR TRUCKS AND BUSES

Why not remember to mention THE AMERICAN CITY?

Janesville, Wis.

Population	21,000
" served	20,000
Number of services	5,826
" " meters	5,340
" " hydrants	542
Miles of water main	68.0

The meter rates in Janesville are as follows:

First 1,000 cu. ft. used per quarter for all sizes of meters is allowed to be consumed under the minimum charge.

Next	9,000 cu. ft. per quarter	15c net per 100 cu. ft. less 10%
"	40,000 " " " "	12c " " " " " "
"	50,000 " " " "	10c " " " " " "
"	100,000 " " " "	5c " " " " " "
"	700,000 " " " "	3c " " " " " "
All over	900,000 " " " "	2c " " " " " "

The minimum charges based on the various sizes of meter are as follows:

5/8"	meter	$1.75 less 10%
3/4"	"	2.00 " "
1"	"	2.25 " "
1 1/2"	"	3.00 " "
2"	"	4.00 " "
4"	"	12.00 " "
6"	"	18.75 " "
8"	"	25.00 " "
10"	"	37.50 " "
12"	"	50.00 " "

Meters in buildings or lots which serve more than one tenant are charged the 5/8" meter minimum rate for each tenant served. If a bill is not paid on or before 5 P. M. of the 16th of the month, a 10% penalty is added. If it is not paid by 5 P.M. of the 25th, water is turned off and a charge of $1.00 is made for reconnection. Bills are payable quarterly January 1, April 1, July 1 and October 1.

H. A. GRIFFEY,
Superintendent, Janesville Water Department.

Hamilton, Ohio

Population	55,000
" served	Unkaown
Number of services	13,174
" " meters	11,000
" " hydrants	829
Miles of water main	112

The city owns all water meters, meters all services, and makes a charge of 17c per month for 5/8" meters, 25c per month for 3/4" meters, and 33c per month for 1" meters. The minimum monthly charge is 90c, and the water-meter rates are as follows:

From	0 to 10,000 cu. ft. per month	$1.80 per 1,000 cu. ft.
"	10,000 " 50,000 " " " "	1.40 " " " "
Over	50,000 " " " "	1.00 " " " "

JOSEPH B. HART,
Superintendent, Water Department.

Parkersburg, W. Va.

Population	30,000
" served	30,000
Number of services	6,700
" " meters	6,700
" " hydrants	559
Miles of water main	74.0

The quarterly meter rates are as follows:

First	6,000 gals. or less	$1.50 (minimum)
Next	24,000 "	.25 per 1,000
"	120,000 "	.20 " "
"	250,000 "	.15 " "
"	500,000 "	.10 " "
Over	900,000 "	.08 " "

The charge per meter per month, which does not include any payment for water, is as follows:

5/8" meter	$ .25
3/4" "	.35
1" "	.65
1 1/2" "	1.50
2" "	2.50
3" "	5.75
4" "	10.00
6" "	23.00

There is a penalty of 10% if the meter bill is not paid on or before the last day of the month in which presented. The penalty limit is $1.00. There is also a minimum output charge per quarter of $1.50 for 6,000 gals. of water or less used during the quarter.

The property owners pay the Department of Water Works and Sewers for the installations of water services which are made by licensed master plumbers. The city makes the following charges to the plumber:

For a tap with no back fill, $10.00, for which the corporation cock and curb cock are supplied and the corporation inserted in the main by the city. There is a charge of $5.00 additional in dirt streets for back fill and maintenance of the ditch, and $15.00 additional in paved streets for back fill, maintenance and repavement.

The city pays nothing to the Department of Water Works and Sewers for the use of water for any purpose. No other free charges or reduced rates are permitted. There is no charge for private fire hydrants or sprinkler systems.

GEORGE HUBER,
Superintendent, Department of Water Works and Sewers.

Olean, N. Y.

Population	22,000
" served	22,000
Number of services	5,722
" " meters	5,722
" " hydrants	510
Miles of water main	66.63

The schedule of water rates in Olean is divided into three classes:

Class A includes meter connections using less than 30,000 cu. ft. during a three-months period. These are billed quarterly, with 10% added for non-payment on or before the 20th of the month in which the bill is rendered, and no bill is rendered for less than $1.00. The minimum charge of $2.25 per quarter has been made, permitting the use of 1,000 cu. ft. of water during the quarter. Beyond that the charges are as follows:

Next 4,000 cu. ft.	20c per 100 cu. ft.
" 5,000 " "	16c " " " "
" 20,000 " "	10c " " " "

Class B services include meter connections using more than 10,000 cu. ft. per month. These are billed monthly, with 10% added for non-payment on or before the 10th of the month in which the bill is rendered. The first 10,000 cu. ft. are billed at $12.75 per 1,000 cu. ft., and all water used above 10,000 cu. ft. is billed at 6 1/4c per 100 cu. ft.

Class C includes meter connections using more than 100,000 cu. ft. of water per month. The first 100,000 cu. ft. is billed at $69.00, and all above 100,000 cu. ft. at 5.5c per 100 cu. ft. This class is billed monthly, with 10% added for non-payment on or before the 20th of the month in which the bill is rendered.

Sprinkler systems equipped with automatic alarms are charged $3.00 per quarter.

In any case where a water bill is not paid by the 25th of the month in which it is rendered, the water is turned off without further notice. In case water is turned off for non-payment, a charge of $1.00 is made for restoring service.

M. F. KLINK,
Clerk, Board of Water Commissioners.

Appleton, Wis.

Population	25,500
" served	25,500
Number of services	6,628
" " meters	6,325
" " hydrants	663
Miles of water main	80.4

The charges for water used per quarter per meter are as follows:

First	1,000 cu. ft.	18c gross per 100 cu. ft
Next	3,000 " "	17c " " " " "
"	6,000 " "	15c " " " " "
"	40,000 " "	12c " " " " "
"	450,000 " "	5c " " " " "
All over	500,000 " "	2 1/2c " " " " "

All service charges for the quarter are due and payable in advance from the first day of the quarter in which such service is to be rendered. The service charge is not divisible and is the same for a fractional part of a quarter as for a full quarter.

		Service Charge
5/8"	meter	$1.20
3/4"	"	1.80
1"	"	3.00
1 1/2"	"	4.50
2"	"	7.50
3"	"	12.00
4"	"	20.00
6"	"	30.00
8"	"	40.00

When there are more than one consumer on a meter, a service charge of $12.00 is assessed to each consumer, and each dwelling, flat, suite, store, etc., is regarded as one consumer in determining the service charge.

All bills, except those for special readings or for special purposes, are dated on the last day of the month prior to the month in which they are due and payable. Bills are rendered at the gross amount minus a discount of 10%, the deduction of which is allowed providing payment is made on or before the 15th day of the month following the date of the bill. Water is shut off without further notice if the bill remains unpaid 30 days after date, and water is not turned on again until all arrears are paid, together with the sum of $1.00 for turning off and on.

WILLIAM U. GALLAHER,
Superintendent, Appleton Water Department.

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1

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With Koppers Tarmac you can build streets that are not only durable under city traffic, and economical to build and maintain . . . but which are also skidproof! The skid-resistance of Tarmac surfaces can be demonstrated and measured. Let us send you the booklet "Surfacing with Tarmac" which tells how to build, maintain and repair streets and roads with Tarmac.

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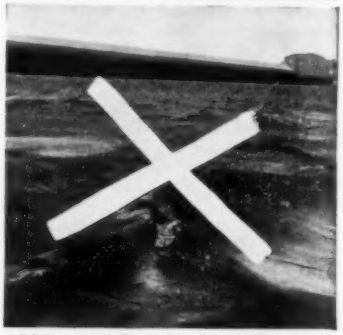
2

FOR ROOFS

Thousands of roofs are failing in this country because of the inability of the roofing materials to withstand the particular conditions which are met with on flat deck roofs. These failures can be stopped by the use of coal tar pitch on flat surfaces. Let us send you the folder "Do's and Dont's on Roofing" which shows how and why certain roofs fail.

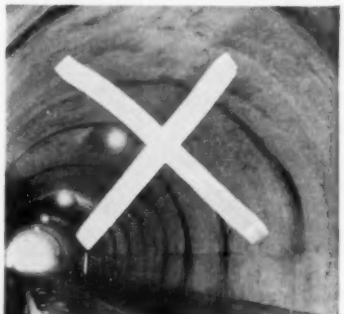


End Roofing Troubles by Using Cold Tar Pitch and Felt on Flat Decks.

3

FOR WATERPROOFING

Many foundations, tunnels, bridges and other structures are giving endless trouble because they should have been waterproofed. Others which were waterproofed are giving trouble because the wrong kind of waterproofing was used. Certain materials now used for waterproofing are unable to withstand water. Send for the Koppers technical report on waterproofing.



This $7,500,000 tunnel is endangered by leaks which Coal Tar Waterproofing would have prevented.

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3. KOPPERS WATERPROOFING MATERIALS

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Plants and Offices Located at Strategic Points Throughout the Country

During March we hope you will remember to mention THE AMERICAN CITY

Johnstown, Pa.

Population	68,000
" served	86,000
Number of services	Unknown
" " meters	17,825
" " hydrants (154 of which are outside Johnstown)	545
Miles of water main	176.22

There is a gravity system and also a pumping system in the Johnstown supply, necessitating two sets of rates because of the added cost of pumping. The rates are:

GRAVITY SYSTEM

First	6,000 gals. per quarter	$4.00	
Next	14,000 " " "	45	per 1,000 gals.
"	80,000 " " "	30	" " "
"	100,000 " " "	20	" " "
"	100,000 " " "	15	" " "
"	100,000 " " "	10	" " "
"	49,600,000 " " "	09	" " "
All over	50,000 " " "	08	" " "

PUMPING SYSTEM

First	6,000 gals. per quarter	$4.00	
Next	34,000 " " "	60	per 1,000 gals.
"	60,000 " " "	45	" " "
"	150,000 " " "	25	" " "
"	150,000 " " "	20	" " "
All over	400,000 " " "	15	" " "

The meter rates for both the gravity and pumping systems are subject to the following minimum quarterly charges:

½" or ⅝" meter	$4.00
¾" "	6.00
1" "	7.00
1½" "	10.00
2" "	15.00
3" "	20.00
4" "	35.00
6" "	60.00

The water company requires a deposit where the credit of the consumer has not been established, based on the size of the meter, but in no case is the deposit less than the average quarterly bill of the consumer.

DEPOSITS

⅝" meter	$5.00
¾" "	8.00
1" "	10.00
1½" "	15.00
2" "	20.00
3" "	30.00
4" "	40.00
6" "	60.00

Water is furnished and a service connection made upon written application signed by the owner, his properly authorized agent, or the tenant, on a blank prepared by the company. Connections from the street main to the curb line, including a curb stop, cock and box are made and maintained by the company except when application is made merely for the temporary use of water, when the cost of the connection must be borne by the applicant. For each apartment, duplex house, office building or business block, a single service is installed from the main to the curb with one stop cock and curb box, except when a building is so constructed that the divisions are capable of being sold separately, and in this case a separate stop cock and curb box is installed for each such division. If the owner of a premises desires, a header is placed by the company at the service pipe at the curb line and a stop cock and curb box installed for each tenant or consumer on the premises.

Fire hydrants are installed and maintained by the company. Whenever the location of a fire hydrant is ordered changed by the municipality, the change is made by the company at the expense of the municipality. The charges for fire service, including hydrants, was made on a lump sum basis as of October 20, 1926, subject to $10.00 for each additional public hydrant plus a charge of $250.00 for each added mile of pipe 4" and over useful for public fire service located in any city or borough after that date. The charges are:

City of Johnstown, existing pipe and	357	hydrants	$31,350.00 per year
Borough of Westmont, " "	40	"	3,050.00 " "
" " Ferndale, " "	11	"	900.00 " "
" " Lorain, " "	5	"	490.00 " "
" " Brownstown, " "	7	"	660.00 " "
" " Dale, " "	13	"	1,230.00 " "
" " Southmoat, " "	21	"	1,650.00 " "

The charge for private fire hydrants is $50.00 each per year. For private fire services and sprinkler systems the charges are as follows:

2" connection	$36.00
4" "	75.00
6" "	150.00
8" "	300.00

CHARLES W. KUNKLE,
Vice-President, Johnstown Water Company.

City of Hazelton and Borough of West Hazleton, Pa.

Population	50,000
" served	63,000
Number of services	7,000
" " meters	6,200
" " hydrants	262
Miles of water main	135.0

The rates per 1,000 gals. for the quantity of water used in excess of the amount allowed in the minimum charge for the various sizes of meters are:

Up to	5,000 gals	per month	35c	per 1,000
Next	50,000 "	" "	24c	" "
All over	55,000 "	" "	13c	" "

MONTHLY MINIMUM CHARGES

⅝" meter	$ 75	per mo.	pays for	700	gals.
¾" "	1.15	" "	" "	1,000	"
1" "	2.00	" "	" "	2,000	"
1½" "	4.00	" "	" "	4,000	"

DETECTOR METERS AND OTHER METERS OVER 1½"

2" meter	$5.00	per mo. no water included
3" "	7.50	" " " " "
4" "	10.00	" " " " "
6" "	15.00	" " " " "
8" "	20.00	" " " " "

All water-meter charges for industrial service are payable monthly on or before the 15th of each month, and the company reserves the right to shut off the water at any time after the last day of the month succeeding that in which the water has been furnished, if the bill is unpaid. After that, water is furnished to such premises only on payment in full for all water furnished to the date of shut-off, together with other charges due.

Applications for connections to the water mains of the company are made by the owner of the property on a special form furnished by the company. The water company installs and retains ownership of the meter, and installs and maintains the service-line from the tap at the main to and including the curb stop and curb box.

About 90% of the patronage is metered, and the meter rates quoted above apply to all classes of metered consumers. Metering of services progresses as sewers are installed, and bathroom fixtures are installed by patrons. In flat-rate territory the rate for the initial cold-water spigot is $7.20 per year.

All fire hydrants are charged at the rate of $25.00 per year.

D. J. MCGEEHAN,
Superintendent, Wyoming Valley Water Supply Co., Hazleton, Pa.

Greenville, Texas

Population	12,500
" served	12,000
Number of services	3,192
" " meters	3,192
" " hydrants	262
Miles of water main	52.0

The water rates in Greenville for 20,000 gals. or less are 30c per 1,000 gals. with a minimum charge of 75c per month for each house using water from an individual meter. The charges for over 20,000 gals. are as follows:

23,000 gals.	to	25,000 gals	$ 6.85
25,000 "	"	30,000 "	8.10
30,000 "	"	35,000 "	9.25
35,000 "	"	40,000 "	10.40
40,000 "	"	45,000 "	11.45
45,000 "	"	50,000 "	12.50
50,000 "	"	60,000 "	14.40
60,000 "	"	70,000 "	16.10
70,000 "	"	80,000 "	17.60
80,000 "	"	90,000 "	18.00
90,000 "	"	100,000 "	20.00
100,000 "	"	115,000 "	21.85
115,000 "	"	130,000 "	23.40
130,000 "	"	150,000 "	25.50
150,000 "	"	175,000 "	28.00
175,000 "	"	200,000 "	30.00
All over 200,000 gals. 15c.			

All bills are due and payable at the office of the Greenville municipal plant on the 10th of each month. If the bills are not paid by the 20th of the month, service is discontinued.

T. S. MITCHELL,
Superintendent and Commissioner, Greenville, Municipal Plant.

237 REPORTS
in
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IMPROVING MUNICIPAL ADMINISTRATION

Current Items from the Public Administration Clearing House

Bringing City Charters Up to Date

IT is difficult to believe that any man would be willing to own and drive an automobile ten years old, yet many municipalities are still struggling along with legislative machinery ten times that age, according to Robert M. Paige, Secretary of the Governmental Research Association, Chicago.

However, Mr. Paige finds that "after years of discussion and slow progress, the movement for reorganization of local governments is well under way." He asserts that all signs seem to indicate that citizens and legislators alike are beginning to see the advantages in the reduction of the number of school districts, the enlargement of administrative areas for the performance of practically all municipal functions, and the centralization of purchasing, budgetary and accounting controls.

In line with this adjustment of governmental functions to modern conditions, the Mayor of Wilmington, Del., has appointed a commission to draft a new charter to replace the one which for 200 years has furnished the basic governmental structure. The commission proposes a four-year instead of a two-year term for the mayor, an increase in the mayor's executive and administrative powers, the grouping of city agencies and bureaus into five departments, and a central purchasing department.

A new city charter for Worcester will probably be passed by the present session of the Massachusetts Legislature, according to Mr. Paige. The charter commission has recommended that Worcester's bi-cameral council be replaced by the more modern one-house body. Should Worcester make this change, only thirteen cities with populations of 30,000 or over will be left with bi-cameral legislatures, whereas, thirty years ago one-third of these cities had two-house councils.

In New Orleans, the Bureau of Governmental Research recently issued a series of reports analyzing the serious structural defects of city government and is preparing to draft a charter providing greater centralization of authority and responsibility in the mayor and city council.

With New York City setting the example, says Mr. Paige, a score of cities both large and small are taking steps to reorganize and rearrange their municipal departments and bureaus. These cities include Syracuse and Binghamton, N. Y.; Boston; Hartford, West Hartford and Norwalk, Conn.; Pittsburgh and Philadelphia, Pa.; Tulsa, Okla.; Long Beach, Calif.; and Trenton, N. J. Several of these cities have their eyes on the city manager form of government.

451 City-Manager Cities in 27 Years

LIMERICK, IRELAND, and Washington Court House, Ohio, which approved adoption of the council-manager plan of government in the last months of 1934, bring the total number of "manager" cities and counties in the United States and foreign countries to 451 as the plan begins the twenty-eighth year of its existence this month.

During 1934, according to the International City Managers' Association, six cities and one county voted to follow the pioneering example set by Staunton, Va., in January, 1908. One Canadian city, Mount Royal, Que., and three other American cities—Schenectady, N. Y., Toledo, Ohio, and Clifton, N. J., adopted council-manager government, and Douglas County, Nebr., joined six other counties already thus managed.

The United States has the greatest number of local governments in council-manager form—432, but the movement has also spread to Canada, Ireland, New Zealand and India. Limerick is the fourth Irish city to adopt the plan, and the government of the Irish Free State has announced the intention of introducing legislation to provide county managers throughout the Free State. Council-manager enabling legislation will be introduced in at least five state legislatures now in session, according to a report of the International City Managers' Association. These states are Illinois, Indiana, Nevada, Pennsylvania and Washington.

Campaigns for the adoption of the manager plan are under way in twenty-five cities in this country at present, including Syracuse, N. Y., and Pittsburgh, Pa. Braintree, Mass., will vote on the adoption of the plan on March 4. Of the eleven cities voting during 1934 on the question of abandoning the manager plan, all except one—Fall River—decided to retain it. The recent Manager of this Massachusetts city has now been elected Mayor.

Citizens Watch Their Governments in Action

OLD John Taxpayer has finally broken into the movies—not, however, with a fat contract, for his is a mission of education. Through forbearance and the medium of sound films, regular patrons of Detroit moving-picture houses now know, from Alderman to Zoo, just what it takes to run a municipal government.

And all because in 1933 the city's finances were low and tax collections were lower.

The making of the films was suggested by Kenneth J. McCarren, member of the Board of Assessors, to acquaint the taxpayer with the low cost of the many services performed for him by the city. For 26 consecutive weeks Detroit movie houses showed a different short feature on some phase of Detroit government—water works, parks and playgrounds, libraries—and explained the cost of running it.

Although, according to J. M. Leonard, of the Detroit Bureau of Governmental Research, it was difficult to trace the actual effect of the pictures on tax collections, the unlimited field for sound motion pictures in enlightening the public on municipal affairs was demonstrated. Such movies, he suggests, might be used as a substitute for the annual report of a municipality to its citizens.

"Open house" is another direct method used with success by a number of cities to acquaint citizens with their local governments. Berkeley, Calif., started the custom several years ago. Oakland, Calif., which follows the same practice, has had as many as 8,000 visitors on one of these "open house" days at the City Hall.

The Tennessee Taxpayers' Association is now suggesting to all incorporated towns and cities of the state that they set aside a "Municipal Day" to give residents a chance to see how the wheels of government go 'round.

Civil Service Assembly Sets Up Offices in Chicago

ESTABLISHMENT in Chicago of headquarters of the Civil Service Assembly of the United States and Canada was announced on February 11 by Clifford N. Amsden, Secretary of the Civil Service Commission of Los Angeles County. Mr. Amsden is President of the national civil service body, the purpose of which is to advance the merit system of hiring public employees. G. Lyle Belsley, at present Director of Personnel in the Farm Credit Administration, has been named Executive Director of the Assembly and will take over his duties about April 1.

Revived interest in improving public personnel by use of the merit system is given as the reason for setting up new headquarters of the Assembly, which for the past four years has been functioning only through Regional Conferences. As announced by the Executive Council, the Assembly now plans to serve as a clearing house for information on public personel administration and to promote the study, development and use of scientific methods of research and administration in the public personnel field.

Offices of the Assembly will be in close proximity to the Public Administration Clearing House.

Pleasant Street, Danbury, Connecticut, Tarvia-built in 1915. Twenty years have brought many changes to this pleasant New England community, but the Tarvia road remains as smooth, easy-riding and skid-safe as the year it was built.

Hundreds of Tarvia roads like Pleasant Street, Danbury, offer proof that Tarvia "can take it." Built in the days when thirty miles an hour was considered reckless speeding, these smooth, easy-riding, skid-safe roads now provide completely satisfactory pavement for the modern high-speed, quick-stopping and quick-starting automobiles of today. Cost records will demonstrate how soundly economical they have been to build and maintain. Let the Tarvia field man tell you about them. Phone, wire or write our nearest office.

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Annual Cost of Various Types of Unemployment Relief

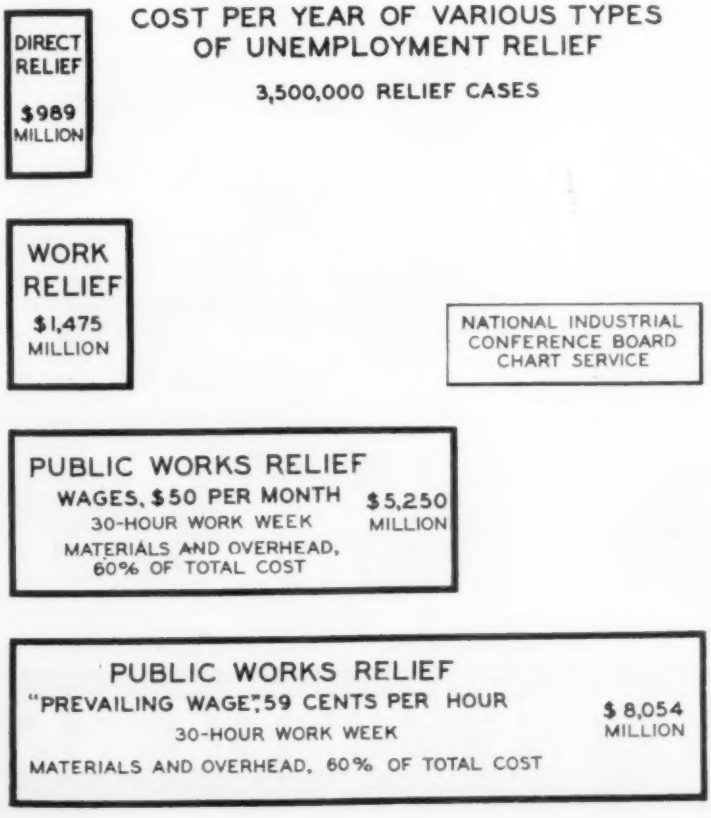
ESTIMATES of the annual cost of various types of unemployment relief made by the National Industrial Conference Board, based on 3,500,000 relief cases, vary from slightly less than $1,000,000,000 for direct relief of the type received by more than half of the persons now on the relief rolls to over $8,000,000,000 for public works relief, with full-time employment, at the "prevailing wage" rate. To quote from the report released February 28:

"The average cost of direct relief per case during the third quarter of the past year was at the rate of slightly over $280 per year. At this annual rate the total cost for 3,500,000 cases would amount to $989,000,000. The average cost of work relief has been around 50 per cent greater than the cost of direct relief. The average for the third quarter of 1934 was slightly over $35 per month, or around $420 per year. Continuous employment for 3,500,000 persons during a perod of 12 months would cost $1,475,000,000.

"The plan now under consideration by Congress has for its purpose the provision of employment on public works during the coming fiscal year for 3,500,000 relief persons, at an estimated total cost of $4,000,000,000. Administration spokesmen have stated in the hearings before the Senate Appropriations Committee that the plan contemplates a monthly wage of $50 and a work-week of 30 hours. A report submitted to the Senate Committee by the Budget Bureau allots $2,100,000,000, or 52½ per cent, for wages, and $1,900,000,000, or 47½ per cent, for materials. This estimate apparently takes no account of overhead, although the overhead on work relief as it is administered at present is over 9 per cent of the total cost. It is likely to be even greater on public works because of the need for a greater number of technical and supervisory positions. The British unemployment relief authorities, after 12 years' experience with public works unemployment relief, estimate that on the average the materials and overhead cost on this type of relief amounts to 60 per cent of the total. Estimates from various American sources range from 60 to 65 per cent for materials and overhead on public works projects.

"A calculation based on a monthly wage of $50, a work-week of 30 hours, full-time employment, with materials and overhead costing 60 per cent of the total cost, gives an annual expenditure of $5,250,000,000, or $1,250,000,000 in excess of the $4,000,000,000 proposed in the appropriations bill. The latter amount will provide constant employment, under the conditions specified, for not more than nine months of the year.

"The average hourly wage on public works projects, reported by the Bureau of Labor Statistics for the month of November, was 59 cents per hour. At this wage rate, under the conditions as to work-week and ratio of materials and overhead cost to total cost outlined above, the total for full-time employment reaches $8,054,000,000. The average annual cost per relief case, on full-time employment, would be $2,300.* If the appropriation is limited to $4,000,000,000, this sum would provide constant employment for 3,500,000 workers not more than six months."



* EDITORIAL NOTE.—It might be pointed out, however, that the 60 per cent of this sum which would go for materials and overhead, plus the added spending of the relief workers themselves, would employ indirectly an even larger number of workers than those given jobs on the relief projects.

Municipal Tax Collections Improve

THE results of a nation-wide survey of tax collections covering reports from 106 cities throughout the United States, just completed by Frank H. Morse of Lehman Brothers, New York, show that there has been a definite improvement in tax collections in 1934 over 1933.

Questionnaires were sent to the finance offices of the principal cities in each section of the country and 106 replies were received from city officials throughout the country. Of the 106 cities which reported, 82, or 77.3 per cent, showed an improvement in 1934 collections over those of 1933, as against 24 cities, or 22.7 per cent, which reported a decrease in 1934 collections. The tabulation by districts follows:

NUMBER OF CITIES REPORTING

Section		Improvement 1934 over 1933	No Improvement 1934 over 1933
New England		9	6
Middle Atlantic	Pa.	9	2
	N.J.	6	1
	N.Y.	12	—
South Atlantic		9	2
Mountain and Pacific		14	1
E. South Central		5	2
W. South Central		7	1
E. North Central		6	5
W. North Central		5	4

The reasons for the improvement in 1934 collections over 1933 are variously stated by 61 city officials who answered this question as follows:

1. *Home Owners Loan Corporations.*—Thirty-six officials attributed the improvement in some degree to the activities of the Home Owners Loan Corporation. Thirteen officials, moreover, cited

WORLD'S LOWEST PRICES

CHEVROLET

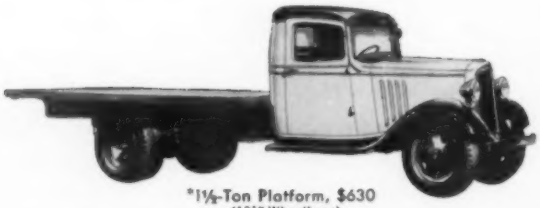
AGAIN in 1934, the insistent demand for Chevrolet products has made Chevrolet *the world's largest builder of trucks* as well as of passenger cars. And truck buyers who want to save money will find that these are not only *the world's lowest-priced* trucks, but that they are also very economical to operate and maintain, due to the excellent quality which Chevrolet builds into them. They are big—rugged—dependable trucks. They are powered by *six-cylinder valve-in-head* engines which use very little gas and oil. And they are extremely long-lived . . . built to do their job and do it faithfully over a long period of years. Buy a Chevrolet Truck and you buy fine, dependable, economical haulage service—*at the world's lowest price!*

CHEVROLET MOTOR COMPANY, DETROIT, MICHIGAN

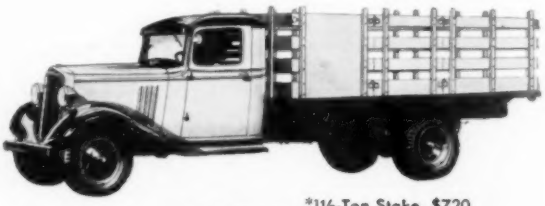
Compare Chevrolet's low delivered prices and easy G.M.A.C. terms. A General Motors Value

Half-Ton Pick-Up, $465
(112" Wheelbase)

*1½-Ton Chassis, $485
(131" Wheelbase)



*1½-Ton Platform, $630
(131" Wheelbase)



*1½-Ton Stake, $720
(157" Wheelbase)

1½-Ton Open Express, $655
(131" Wheelbase)

*1½-Ton Stake, $660
(131" Wheelbase)

*Above are list prices of commercial cars f.o.b. at Flint, Mich. Special equipment extra. *Dual wheels and tires $20 extra. Prices subject to change without notice.*

CHEVROLET TRUCKS

the Home Owners Loan Corporation as the only factor responsible for the improvement.

2. *Improvement in general business conditions.*—This reason was credited in part by twenty-three officials; three officials stated that it was the only reason for the improvement.

3. *Strict enforcement of tax collections.*—Twenty-three officials placed some importance on this factor; four conclusively. Some mentioned particularly the use of tax receivership laws, the prompt mailing of tax bills and delinquent tax notices, increases in tax penalties, the notification of the first mortgagee when taxes became delinquent, personal contacts with the taxpayer, the enactment of tax lien laws, tax sales, the use of advertising and the radio, tax campaigns and "increased efforts" on the part of officials.

4. *The payment of taxes in instalments.*—Five officials attributed the improvement to this factor in part; one official stated that this was the principal reason.

5. *Tax reduction.*—Three officials cited this factor as partially responsible and one of these credited the Homestead Acts with influencing the improvement.

6. *Miscellaneous factors.*—The opening of closed banks and the payment of dividends (three officials); easier credit by banks on loans (1); elimination by banks of interest on commercial deposits (1); uniform treatment of taxpayers (1); relief disbursements by Federal Government (1); an improved attitude toward tax paying and the abatement of penalties for tax delinquency which was stressed by some officials as in part responsible.

The majority, as shown above, cited the activities of the Home Owners Loan Corporation, general improvement in business conditions and the application of strict collection methods as being primarily responsible for the improvement in 1934 collections.

An examination of the tax collection methods employed reveals the following:

Nineteen cities in the group provided for quarterly payment of taxes; forty-three made taxes payable semi-annually and forty-five reported taxes payable annually.

Forty-nine provided for no discounts where taxes were paid in advance. Forty-six allowed discounts which ranged from ½ of 1 per cent to 6 per cent.

Only nineteen cities reported the holding of annual tax sales. Twenty-six cities reported that annual tax sales were not held. The rest of the cities failed to report.

The period of redemption of property following tax sales was found to vary from 1 year to 5 years. The largest number of cities, 32, reported that 2 years were allowed in which to redeem property. Three cities, Kansas City, Mo., Duluth, Minn., and Los Angeles, Calif., allowed 5 years.

Penalties for tax delinquency also showed considerable variation, ranging from ½ of 1 per cent per month to 12 per cent per annum. Twenty-four cities reported a flat annual penalty which averaged 7 per cent; thirty-five cities reported a monthly penalty averaging 1 per cent.

In drawing conclusions from the survey, Mr. Morse said, "it should be noted that with few exceptions those cities which showed the greatest improvements in collections in 1934 were those which held annual tax sales, provided for short redemption periods and provided stiff penalties for tax delinquency. That there is need for the improvement of tax collection systems in general is now recognized. The National Municipal League is drafting a model tax collection law through a committee headed by Arnold Frye of Hawkins, Delafield & Longfellow, municipal attorneys of New York, which, if adopted in the various states, should go far toward eliminating many of the present obstacles to the successful enforcement of tax collections."

City Manager Appointments

T. M. S. KINGSTON has been appointed City Manager of Chatham, Ont., to replace A. L. Thompson. Mr. Kingston has been City Engineer and will now hold both positions.

A. H. Balch, a local man, has been appointed City Manager of Tyler, Texas. He succeeds Lee H. Powell, who has served as Manager of Tyler since 1926.

E. B. Hawks, retired business man, succeeds H. B. Anderson as City Manager of Portsmouth, Va.

John C. Luikart has succeeded Ivan C. Bridges as City Manager of Clovis, N. Mex.

Walter P. Koetitz has been appointed City Manager of Alameda, Calif., to succeed Ralph M. Bryant, who resigned February 12.

E. C. Dunn was appointed City Manager of Alexandria, Va., on February 12. He fills the vacancy made by the resignation of Wallace Lawrence last October.

CLARENCE E. RIDLEY,
Executive Director, International City Managers' Association.

More Than Fourteen Billion Dollars of Potential PWA Projects Reported

WHEN the final week's reports of the State Engineers are tabulated, it is evident that state and local projects for which Federal aid is sought, to the number of nearly 100,000 and involving expenditures of over $14,000,000,000, will have been listed in the new national inventory of potential projects. The exact figures, reported from Washington up to March 2, were 94,178 projects, estimated to cost $13,938,369,980.

More than 25,000 street and highway projects, estimated to cost $2,872,621,978, have been reported.

The next largest type is school buildings. More than 20,000 school building projects, estimated to cost $943,431,834, were reported.

An analysis of types of projects reported follows:

Types of Projects	Number	Estimated Cost
Water works	5,857	$864,442,277
Sewers	6,537	946,802,237
Streets and highways	25,373	2,872,621,978
Heavy engineering structures	2,832	2,903,846,911
Buildings—school	20,647	943,431,834
Buildings—all others	10,764	1,303,283,345
Power (electricity, gas, etc.)	1,814	591,558,059
Airports and landing fields	758	44,226,196
Grade crossings	2,892	577,249,595
Recreation	7,399	347,744,230
Drainage, flood control, irrigation and reclamation	4,405	1,774,564,541
Miscellaneous	4,900	768,598,777
Total	94,178	13,938,369,980

New York topped the list, with 1,348 projects estimated to cost $2,080,494,893. New Jersey reported 2,432 projects, estimated to cost $1,536,118,912; Michigan 9,884 projects, to cost $1,262,739,922; and California 3,378 projects, to cost $924,348,535.

Although the inventory disclosed a vast number of public works projects, PWA officials pointed out that many of them could not qualify under existing stringent PWA requirements as to legality and financial soundness. No analysis has yet been made to determine how many of the projects reported in the inventory already are on the PWA waiting list due to lack of funds. Most of the inventory projects are of the non-Federal type, for which PWA has made loans and grants amounting to approximately $1,000,000,000, although the 94,178 projects reported in the round-up include many proposals for outright Federal grants.

The purpose of the inventory was to take stock of the nation's public works requirements. As reported in THE AMERICAN CITY last month, questionnaires were sent to municipalities, counties, planning boards, school boards and other public bodies. The field work was done by PWA State Engineers, who received the cooperation of the National Resources Board and state planning boards and commissions.

The questionnaires do not constitute formal applications for allotments since February 29, 1934, and is not receiving them now and will not receive them until the new program is authorized. At that time more than $2,000,000,000 worth of non-Federal projects and $1,000,000,000 worth of Federal projects were pending. Only a small proportion of these have been approved, owing to the depletion of the $3,700,000,000 works fund. It is hoped, of course, that Federal funds for a substantial percentage of these projects will be available out of the new work-relief funds now under consideration by Congress.

At NORRIS DAM the CEMENT and STEEL is hauled by INTERNATIONAL TRUCKS

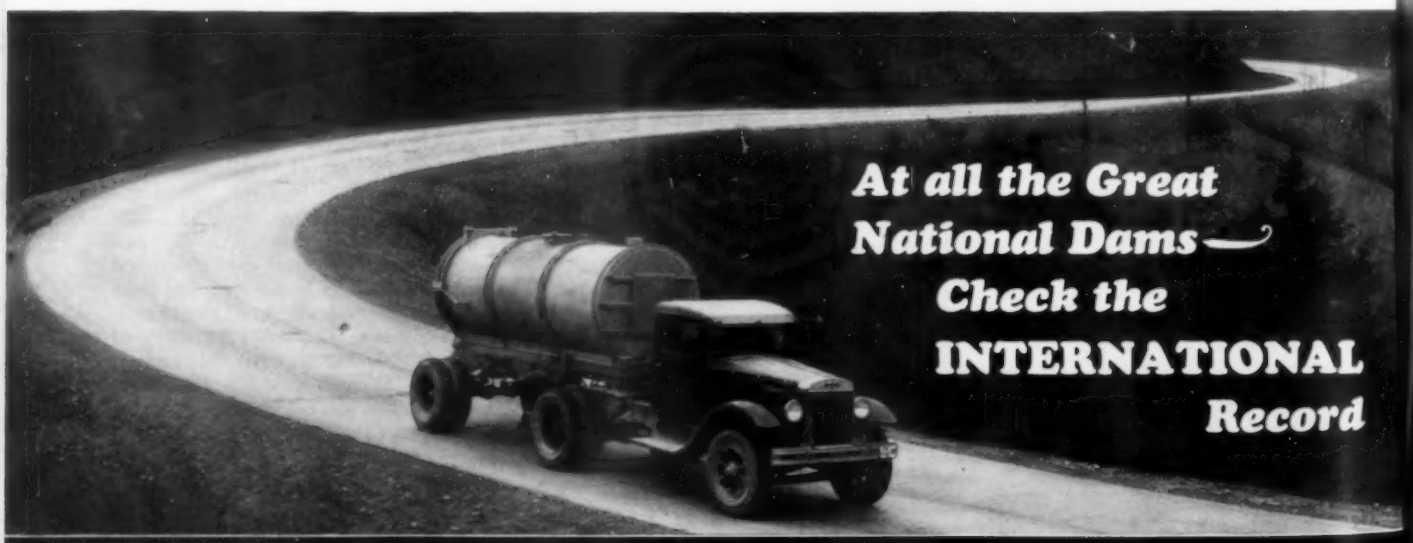
Originally a railroad was planned to get the vast tonnage of cement and reinforcement steel from the railroad siding at Coal Creek, Tenn., up to Norris Dam, but a show-down on efficiency gave the job to trucks—INTERNATIONALS.

A scenic highway 4.8 miles in length was built up the steep grades (eventually it will continue on over the completed dam) and a fleet of International Model A-8 tractor-trucks with semi-trailers got onto the job, to carry on twenty-four hours a day during the many months of dam construction. The aluminum tanks of the trailers hold a capacity of 65 bbl. or 24,440 lb. of cement. Steel and lumber are hauled on other types of trailers.

On the Tennessee Valley projects, as on the most spectacular construction enterprises elsewhere in the country, International Trucks are playing a generous part, consistently dependable, efficient, economical.

Service through 217 Company-owned branches.

INTERNATIONAL HARVESTER COMPANY OF AMERICA, INC.
606 South Michigan Avenue, Chicago, Ill.



Municipal Fire Alarms—A Worthy PWA Project

By VINCENT C. STANLEY

President, The Gamewell Company

PRESIDENT ROOSEVELT'S formal recommendation for another $4,000,000,000 PWA loan, considered along with his recent letters to the Governors of the 48 states offering the assistance of the Public Works Administration to enable municipalities to obtain fuller benefits of any additional loans that are made available during the next session of Congress, suggests looking into the extent to which municipalities have already taken advantage of PWA aid for improving and extending fire-alarm protection. For, although the Federal Emergency Administration of Public Works agrees that fire-alarm projects are extremely useful and necessary from the public standpoint, and has favorably considered certain applications received for this purpose, it appears that only twelve cities and towns have been granted loans for this vital improvement. These are: Chelsea, Mass., Charlotte, N. C., Gretna, La., Burlington, N. C., Shreveport, La., Lenoir, N. C., Delmar, N. Y., Nashville, Tenn., Allingtown, Conn., Bath, Maine, Donaldson, La., and Fairfield, Conn.

Many municipal officials have for several years been so concerned regarding relief work that they have overlooked needed upkeep and extension of their signaling equipment. Even those who keenly realize the seriousness of such need ofttimes are reluctant to advocate the required expenditures, fearing adverse criticism on the part of those who do not understand how serious may be the results of neglect to keep such systems adequate in extent and reliability to the needs of the community.

Yet, Harold A. Stone in his booklet, "Fire Insurance Classification of Cities and Fire Losses," recently published by the Public Administration Service, states: "The factor of 'fire alarm' is the second most neglected by cities," in discussing the various factors that affect the fire insurance rating of a city. Mr. Stone goes on to say: "Our analysis of the present system of grading indicates that to obtain a better classification most cities should give more attention to the elements appraised under 'structural conditions' and 'fire alarm.'"

The frequency of newspaper accounts of serious fires indicates the results of inadequate fire protection facilities, particularly the insufficiency of fire-alarm equipment, since there is a stage in the history of almost every fire when it could have been extinguished without loss of life or injury to person, and with only nominal loss of property, had a suitable alarm signal been effectively transmitted to the Fire Department. There is a tendency to overlook these significant facts:

1. When municipal property burns, its replacement adds to the tax burden.

2. When factory, dwelling or private property burns, it decreases the sum of taxable property and thus again adds to the tax burden of the remainder of the community.

3. When a factory or other business burns, there is little likelihood of its being rebuilt, under present conditions, consequently the enterprise is likely to move to some other place, leaving local people out of employment, adding to human suffering and requiring increased relief expenditure.

The allotment of PWA funds to fire-alarm projects accomplishes all that is contemplated by the use of public funds for municipal and private projects, in that it not only provides employment for a capital goods industry, but also provides, first, immediate employment of local labor for the installation of such equipment in the community for which it is intended, and, secondly, permanent employment of persons for servicing, maintaining and operating such systems.

The National Board of Fire Underwriters is continually pointing to the need for a greater number of fire-alarm boxes so as to provide adequate protection against fire in territories where there is an increasing density of population and also in those communities where there is now no fire-alarm protection. In many municipalities there is today an actual insurance penalty imposed on all property owners because of the lack of adequate fire-alarm facilities.

It is therefore surprising to realize to what a limited extent municipalities have responded to the offer of Federal aid, because after all is said and done every taxpayer will have to contribute his share of the taxes required to pay off the public debt on account of these expenditures, regardless of the extent to which his city or town directly benefits from them for PWA improvements, so why not profit through permanent local improvements?

State Chamber Report Urges Government Aid for Housing

THAT conservative opinion has come to recognize the need for government aid in solving the low-rent housing problem, is evident from a report released for publication on March 4 by the Chamber of Commerce of the State of New York.

The adoption of a master plan for the development and re-zoning of New York, which will provide for the rehabilitation of blighted areas and large-scale low-cost housing projects, is recommended to the city authorities in this report of the Chamber's Special Committee on Housing, Charles C. Meyer Chairman.

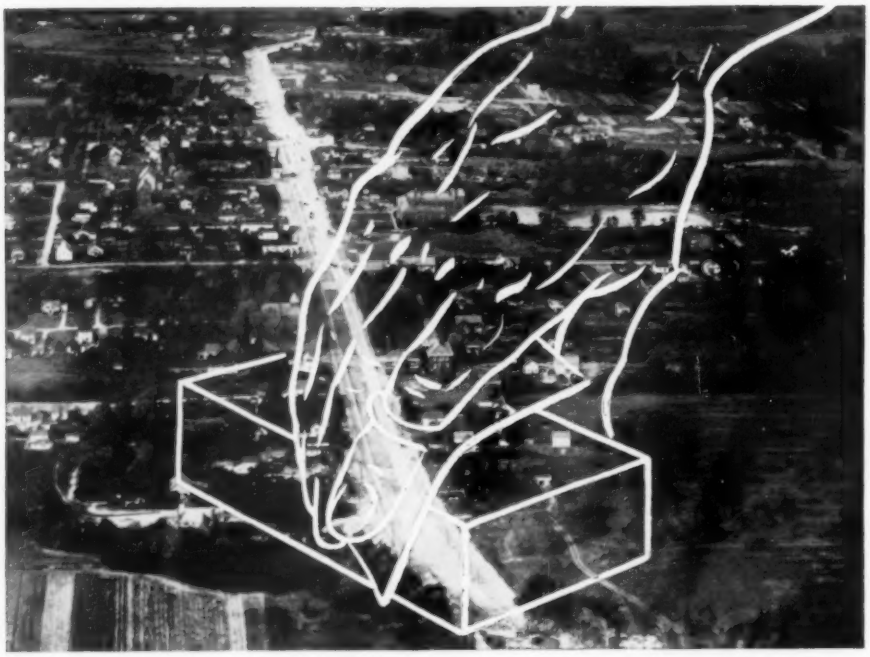
The Committee believes that, pending the adoption of a master plan, low-cost housing projects should be encouraged, particularly on sites now occupied by obsolete dwellings. Government aid is held essential to the successful carrying-out of such projects. The Committee would have such housing available to families with incomes from $1,000 to $3,000. Ownership and management would be vested in limited dividend companies on whose boards the Government would be represented.

The Municipal Bond Market

Recent sales of new issues from the February numbers of *The Bond Buyer:*

Amount	Borrower and Purpose	Rate (%)	Term (Years)	Basis (%)
$194,000	Multnomah Co., Ore., School, Refunding	2	2.16 Avg.	1.99
1,200,000	Rochester, N. Y., Water	2.25	4.83 Avg.	2.2
211,000	Wichita, Kans., Improvements	3	5.5 Avg.	2.40
164,000	Wapello Co., Ia., Funding	2.75	5-8.25 Op. Avg.	2.45
300,000	St. Paul, Minn., Welfare	2.75	5.75 Avg.	2.71
200,000	Cattaraugus Co., N. Y., Highway, Refunding	2.75	11.5 Avg.	2.73
2,000,000	Davidson Co., Tenn., Public Building, Court House	3	16.25 Avg.	2.98
800,000	Bayonne, N. J., Tax Revenue	3.40	2 Avg.	3.39
372,000	Buffalo, N. Y., Police Headquarters Building	4	10.16 Avg.	3.44
117,000	Muskogee, Okla., Water, Impr.	4	10.75 Avg.	3.60
280,000	Durham, N. C., Sewage disposal	4	12.5 Avg.	3.79
697,000	Orange, N. J., Genl. Refunding	4	18.83 Avg.	4
245,000	Toledo, Ohio, School, Refunding	4.5	3-14.66 Opt.	4.405 Avg.
2,705,000	Clifton, N. J., Water	4.75	30.25 Avg.	4.72
200,000	Anniston, Ala., Funding	5	16.66 Avg.	5.41

USE BRICK IF YOU WOULD PROTECT FROM WEATHER DAMAGE



VALUABLE STREET AND HIGHWAY IMPROVEMENTS NEED THE PROTECTION OF BRICK

Damage due to the effects of weather is the outstanding cause of pavement failure.

You probably have seen that proved on some unprotected pavement that went to pieces carrying little or no traffic. Weather destroyed it.

Lowest Yearly Cost

A brick surface is the best way to prevent destruction by weather. It seals the base from water and its destructive action. Freezing and thawing are eliminated as dangers to pavement life. The vitrified wearing surface is an armor that cannot be pierced. The flaws and weaknesses that otherwise cause traffic to pound and hammer are not allowed to develop.

Wherever records are kept, brick surfacing shows lowest yearly cost. A life of 30 to 40 years of hard wear is not uncommon even when built according to the engineering standards in vogue before the era of auto and truck traffic.

Safety for Highspeed Traffic

Recent development of manufacture and paving construction technique makes a modern brick pavement surface admirably suited in comfort and safety to highspeed traffic.

A large number of cities and states are resurfacing various types of worn pavement with brick, thus converting pavements of questionable value into the highest type roads and streets.

For recommendations on resurfacing various types of pavement with brick, write National Paving Brick Association (Affiliated with Structural Clay Products, Inc.) 1245 National Press Building, Washington, D. C.

BRICK

Has least yearly cost of any pavement

State Populations Estimated

ERRONEOUS newspaper reports last month gave the impression that the population of Continental United States had been officially estimated at 141,574,000. In reply to an inquiry from THE AMERICAN CITY, the geographer of the Bureau of the Census, C. E. Batschelet, states that this figure apparently includes the population of the outlying possessions; but that for Continental United States the latest estimate computed by the Bureau of the Census (as of July 1, 1934) totals 126,425,000, as compared with 122,775,046 on April 1, 1930. The figures for the several states follow:

	Federal Census April 1, 1930	Estimated Population July 1, 1934
Alabama	2,646,248	2,710,000
Arizona	435,573	457,000
Arkansas	1,854,482	1,876,000
California	5,677,251	6,158,000
Colorado	1,035,791	1,056,000
Connecticut	1,606,903	1,655,000
Delaware	238,380	242,000
District of Columbia	486,869	497,000
Florida	1,468,211	1,575,000
Georgia	2,908,506	2,911,000
Idaho	445,032	448,000
Illinois	7,630,654	7,876,000
Indiana	3,238,503	3,304,000
Iowa	2,470,939	2,485,000
Kansas	1,880,999	1,905,000
Kentucky	2,614,589	2,657,000
Louisiana	2,101,593	2,166,000
Maine	797,423	804,000
Maryland	1,631,526	1,671,000
Massachusetts	4,249,614	4,335,000
Michigan	4,842,325	5,093,000
Minnesota	2,563,953	2,602,000
Mississippi	2,009,821	2,057,000
Missouri	3,629,367	3,678,000
Montana	537,606	*537,606
Nebraska	1,377,963	1,395,000
Nevada	91,058	94,000
New Hampshire	465,293	470,000
New Jersey	4,041,334	4,231,000
New Mexico	423,317	437,000
New York	12,588,066	13,059,000
North Carolina	3,170,276	3,301,000
North Dakota	680,845	688,000
Ohio	6,646,697	6,836,000
Oklahoma	2,396,040	2,475,000
Oregon	953,786	990,000
Pennsylvania	9,631,350	9,826,000
Rhode Island	687,497	705,000
South Carolina	1,738,765	1,750,000
South Dakota	692,849	705,000
Tennessee	2,616,556	2,676,000
Texas	5,824,715	6,073,000
Utah	507,847	520,000
Vermont	359,611	361,000
Virginia	2,421,851	2,446,000
Washington	1,563,396	1,608,000
West Virginia	1,729,205	1,786,000
Wisconsin	2,939,006	3,005,000
Wyoming	225,565	232,000

* Population April 1, 1930; decreased 1920 to 1930; no estimate made.

Assessments in Pittsburgh

PITTSBURGH, PA.—The Board of Assessors of the city of Pittsburgh has made an interesting tabulation of the character of the various parcels of assessment in regard to the comparison between land and building value. Since the city levies a different tax on buildings from that which it levies on the land, it is necessary to separate the valuations of the two.

Out of the 105,656 parcels, there are only 610 in which the building and land values are equal. The number of parcels where the building value exceeds the land value is about three times that of those which have a higher land value than building value.

ASSESSED VALUES OF LAND AND BUILDING IN PITTSBURGH COMPARED

Ward	Land Value Exceeds Building Value	Building Value Exceeds Land Value	Building Value Equals Land Value
1	798	357	3
2	808	166	4
3	665	1,241	15
4	624	2,605	15
5	633	2,944	31
6	553	1,213	22
7	469	1,607	18
8	578	2,108	32
9	409	1,668	36
10	1,029	3,352	33
11	750	2,916	22
12	931	3,167	21
13	1,032	3,415	25
14	990	5,992	1
15	1,047	4,055	3
16	733	2,600	34
17	1,213	1,519	50
18	773	3,096	38
19	2,575	7,036	22
20	1,773	3,623	37
21	206	2,429	11
22	724	936	10
23	421	1,373	24
24	346	2,048	15
25	540	1,988	48
26	1,144	4,105	7
27	464	4,085	12
28	1,840	1,506	3
29	766	2,694	3
30	36	1,435	1
31	663	1,001	11
32	800	1,043	3
Total	26,333 parcels	79,323 parcels	610 parcels

WILLIAM N. McNAIR, Mayor.

"Let's Quit Gambling in Land"

To the Editor of THE AMERICAN CITY:

I have read and re-read your talk before the Massachusetts Federation of Planning Boards of last October on "Shall Our City Plans Gather Dust?" I am going to bring it to the attention of the members of this Commission, for I am convinced that you strike at the root of the trouble, the trouble with planning. The high enthusiasm of the young planning commission, as contrasted with its weary middle age, is more or less discouraging. You are eminently right when you call for a crusade, and a continuing one, to recapture that early fervor, and to keep it alive.

You ask, 'How shall we go about it?" I am trying in this letter to outline my idea of the answer. Will you agree that any such crusade must be directed primarily to the emotions, that it cannot unfortunately, be impersonal, and that such a crusade must be simple, and stated with simplicity? I well remember a talk given by an experienced advertising man, and his advice to any one composing an advertisement, "Remember, they are only 14 years old, and they don't want to read it."

All right: "LET'S QUIT GAMBLING IN LAND."

That's personal—all of us are either gambling in land, or wishing we were in a position to, and condoning the individual who gets away with it. It is not the naughty, naughty real estate man, it's all of us. Read the report of the National Resources Board, analyze their proposals, and you will see, across the path which leads to their realization, the obstacle of land speculation.

Talking to the Monterey County Planning Commission recently, I was protesting against a rather ugly example of a man grasping at some unearned increment, to the decided detriment of the community which had created the value. The answer I got from one of the members was, "Well, Conover, you would do the same if you could." That member would not excuse me if I found a plugged nickel in my pocket and tried to pass it on; he would laugh at me if I tried to pay my taxes with a share of depreciated stock at the amount I paid for it; and, of course, he utterly condemns the pickpocket and the second-story worker. Unfortunately, however, when handling land, it is too generally regarded as ethical to break the zoning ordinance, to soak the public an exorbitant price for some land it needs for a road or park, or to work with some land speculators to effect the moving of the retail district.

We must, and I think we shall, raise our moral standards. We have done so in our relation to the stock market; we must do so in our relation to the land. I heard Lincoln Steffens say once that as a young reporter he had felt that the "Shame of Our Cities" was traceable to bad men, but that he now felt it was the outcome of a bad system. He was referring to the system of *laissez faire*, or that of Communism or Fascism. I feel that underlying all of them there is a system of morals, and if that base is sound, the design of the superstructure is a secondary consideration.

Any discussion of how we are going to "quit gambling in land" is beside the point and confuses the issue, until there is a widespread conviction that it must be done. There is the Henry George system; there is the New Zealand one; there is, I must confess, the Conover system, still in an embryonic stage, and not at all likely to be born alive. Whether we choose any one of them, or whether the method adopted will be one quite different, is an entirely academic question until the time arrives when Mr. Average Citizen is determined that something must be done about it.

So I suggest that we concentrate on this one question; that we identify the enemy you have pointed out; that we confess that we are all of us culpable of certain treasonable dealings with him, and that we make a high resolve that we will hereafter look upon land as something to use, as something to invest in—not as a sort of glorified slot machine.

Until we do that, most of our planning is only thumb-twiddling in a vacuum.

REEVE CONOVER,
Secretary-Engineer, Monterey County Planning Commission, Monterey, Calif.

An Invitation to Every MUNICIPALITY That Wants to Reduce Transportation Costs

FORD V-8 TRUCK

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Prepared by
FRANK B. WILLIAMS
Author of "The Law of
City Planning and Zoning"

ZONING and PLANNING NOTES

From Data collected
by the Zoning Committee
of New York
(233 Broadway)

Zoning—Unnecessary Hardship

FLORIDA.—*State ex rel. Landis v. Valz*, 157 So. 651 (Supreme Court, November 26, 1934).—The Jacksonville Kennel Club, Inc., applied to the Building Commissioner of the city of Jacksonville for a permit to operate a racetrack in a residential district. The zoning ordinance of the city, previously enacted, provided that the City Commissioners might give relief in cases of practical difficulty or unnecessary hardship. The Building Commissioner refused to issue the permit unless and until a successful application therefor was made to the Commissioners; and application to them for this purpose was duly made and advertised.

Thereupon the Attorney General of the state brought this action, claiming that the provision authorizing the application was invalid as an attempt to give the Commissioners legislative power, i. e. the power to zone the city. The Court, however, holds that the power given the Commissioners is not legislative but administrative, and is therefore valid and proper. The Court also affirms the legality of proper zoning laws and ordinances in Florida.

Billboards—Amenity

MASSACHUSETTS. — *General Outdoor Advertising Co., Inc., v. Department of Public Works*, Supreme Court, Advance Sheets, January 10, 1935.—In 1918 the Supreme Court of Massachusetts amended its constitution by adding to it Article 50: "Advertising on public ways, in public places and on private property within public view may be regulated and restricted by law." In conformity with this amendment, legislation was enacted and regulations under it adopted compelling various outdoor advertising companies to relocate or remove various billboards without compensation. The highest Court in Massachusetts sustained the amendment, the statutes and the regulations, holding them valid under the constitution of the state of Massachusetts and that of the United States.*

Private Covenant

OKLAHOMA.—*Van Meter, Building Commissioner, v. Manion*, 38 Pac. 2d, 557 (Supreme Court, October 30, 1934).—Manion is the owner of a corner lot in a tract of land in Oklahoma City restricted by private covenants to use for residential purposes. He asks for a permit to erect a business structure on his lot, claiming that there has been a change of conditions which makes it inequitable to prevent him from so doing. The Court, however, decides that there has been no such change, and therefore maintains the covenant limiting the use of the land to residential purposes, and refuses to allow Manion to erect his business structure.

It is true that equity will not enforce restrictive covenants in deeds of lots in a tract of land where the character of the neighborhood has so changed as to make it impossible to accomplish the purpose intended by such covenants; or where the violations have been so general as to indicate a purpose and intention on the part of the residents of the community to abandon the general scheme or purpose. But the facts in this case do not show that this is true here. The fact that traffic has increased on streets surrounding the restricted area may be considered as evidence showing a change of conditions, but is not sufficient in itself to warrant the releasing of the affected property from the restrictive covenant.

Nor does the fact that, on account of the change of conditions outside, the lot in question has become more valuable for business, by itself, warrant the freeing of that lot from the covenant; that lot must be considered in its relation to the entire restricted tract.

Neither is it true, because a small part of a restricted district, lying along its edge or threshold, is forced to bear the brunt of attack from outside commercial expansion, and as a result is impaired in value for the use prescribed by the restrictions, that for this reason the restrictions will be abated as to the part so affected. The very purpose of the restrictions is to protect the tract from such invasions. The area must be considered as a whole.

Filling Station

PENNSYLVANIA.—*Duty v. Vacuum Oil Co.*, 175 Atl. 522 (Supreme Court, November 26, 1934).—Landowners whose properties were situated in a district zoned as residential are not, under the facts in this case, entitled to an injunction against the erection of a filling station in an adjoining residential district.

Dedication

TEXAS.—*Miller v. Dallas County*, 71 S. W. 2d, 377 (Court of Civil Appeals, May 19, 1934).—Where a deed or map shows a portion of the land described in it as dedicated to the public for streets or other public uses, and the deed is recorded, and the land or a portion of it is sold, the purchaser has the right to rely upon this representation of dedication, and the former owner is estopped to deny his intention to dedicate. Nor is it material that the designated streets have not yet been thrown open to the public, or if thrown open, that they have not been used by the public at large.

* For a full review of this case by Albert S. Bard, see the February issue of THE AMERICAN CITY, page 40.

Zoning at Intersections

TO THE EDITOR OF ZONING AND PLANNING NOTES:

Some time ago in your Notes I read of a decision validating a zoning board's act of zoning two or four corner lots, at an intersection of two streets, to local business, and leaving the other two residential.

In re-zoning our city such a problem confronts us, and I cannot locate this citation on anything similar that justifies our doing this. Could you help me in this matter?

We have placed such an arrangement on our map and have taken the assumption that such zoning indicates the trend for the corner to the remaining property owners, who are zoned residential.

RALPH W. BOONE,
City Planner.

Midland, Mich.

THE EDITOR'S REPLY

My dear Mr. Boone:

The reasonableness of any zoning regulation depends of course largely upon local conditions. Generally both sides of a street are placed in the same zoning district, the division line between districts being located at the rear lot line. This general practice was recognized in the Illinois case of *Forbes v. Hubbard*, decided April 23, 1932, and given in my Notes for June, 1932; but in that case and in the California case of *Feraut v. City of Sacramento*, 269 Pac. 537, given in these Notes for November, 1928, the Court held that there was nothing necessarily illegal in running the division line through the center of the street.

To the zoning of the corners of intersecting streets different considerations often apply, it not being uncommon to place them, or some of them, in a business district while zoning the land back of the corner as residential. This is done because the corners are more suitable for business than the rest of the street, and in this way, in many localities, a sufficient provision in the given locality is made for business.

The case that most directly answers your question, so far as I know, is the California case of *Smith v. Collison*, 6 Pac. 2d, 277, given in these Notes for March, 1932, which decided that there is nothing necessarily improper in zoning three corner lots at an intersection for business, and the fourth for residence.

FRANK B. WILLIAMS.

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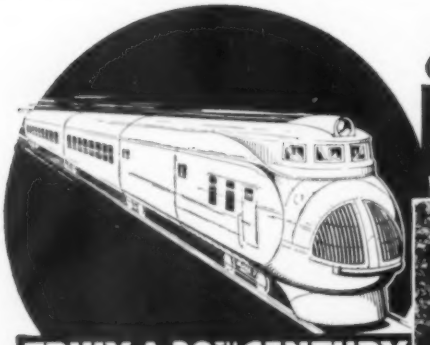

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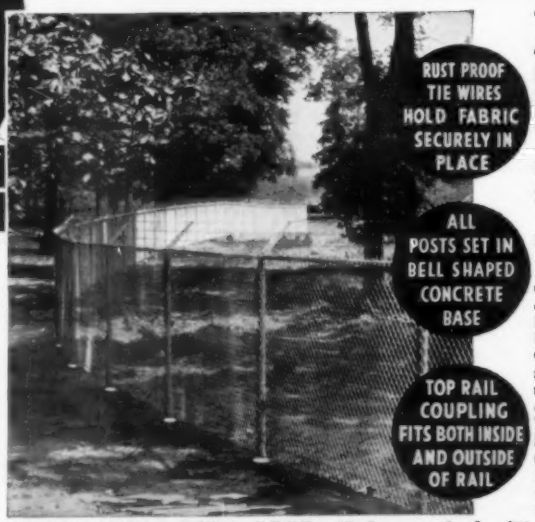
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Accidents

City held not liable for injury to woman who slipped on ice formed by melted snow shortly before accident (Minnesota Supreme Court: *Mesberg v. City of Duluth*, 254 N. W. 597). Pedestrian held not bound to go into street to avoid ice on sidewalk unless ordinarily prudent person would under same circumstances (Missouri Supreme Court: *Newberry v. City of St. Louis*, 70 S. W. 2d, 546).

City held not liable for negligence in discharging statutory duty to maintain circuit court offices, resulting in injury to workman (Kentucky Court of Appeals: *Erpenbeck v. City of Covington*, 69 S. W. 2d, 338).

City held not required to maintain a barrier to prevent vehicles from going over embankment bordering street (Kentucky Court of Appeals: *City of Ludlow v. Albers*, 69 S. W. 2d, 1051).

City held not liable for injury to patrolman caused by defective motorcycle furnished him (Georgia Court of Appeals: *Brannan v. City of Brunswick*, 174 S. E. 186).

Village held not liable for negligence of contractor in digging trench to install water main, resulting in breaking gas service pipe and an explosion in an abutting building (Wisconsin Supreme Court: *Strohmaier v. Wisconsin Gas & Electric Co.*, 253 N. W. 798).

Village held liable for injury to hockey player due to negligent construction and maintenance of balcony railing in community building (Minnesota Supreme Court: *Howard v. Village of Chisholm*, 253 N. W. 766).

Volunteer fire association held liable for negligent operation of fire truck resulting in personal injury to person riding on same (Connecticut Supreme Court of Errors: *Voltz v. Orange Volunteer Fire Assn.*, 172 Atl. 220).

City held not liable for injury to pedestrian stepping on manhole cover where city had no actual notice of defect and cover was apparently secure (Nebraska Supreme Court: *Gates v. City of North Platte*, 254 N. W. 418).

Bridges

Taxpayer held not entitled to enjoin reconstruction of bridge although old one was legally sufficient (New Hampshire Supreme Court: *Langley v. Brown*, 169 Alt. 477).

Civil Service

Mandamus proceeding to compel reinstatement of removed employee held barred by nearly a year's delay (Louisiana Supreme Court: *State v. Sewerage and Water Board, New Orleans*, 153 So. 533). But eight months' delay in seeking review of dismissal was held not fatal (New Jersey Supreme Court: *O'Driscoll v. Scott*, 172 Atl. 797).

Resolution abolishing office of borough recorder upheld as not shown to have been fraudulently adopted, and because incumbent delayed five months in seeking review of resolution by the courts (New Jersey Supreme Court: *Jacoby v. Mayor and Council, Borough of Carteret*, 170 Atl. 613).

Safety director reducing police force to meet reduced appropriation held not bound to remove recent appointees, as against older members of force (Pennsylvania Supreme Court: *Leary v. City of Philadelphia*, 172 Atl. 459).

Police captain held not removable for use of privately owned cars in public service where city police car was out of repair (New Jersey Supreme Court: *Morrow v. City of Somers Point*, 170 Atl. 624).

Removal of superintendent of identification bureau of Police Department held not sustainable on ground of necessity for reducing expenses, where attempt was made to give position to assistant, although removed officer was willing to remain at lowered salary (Texas Court of Civil Appeals: *Ellis v. Holcombe*, 69 S. W. 2d, 449).

That policeman stood first on list held not to exempt him from suspension with others (New York Supreme Court, Chautauqua County: *Fogle v. Levin*, 268 N. Y. Supp. 419).

Deputy police commissioner conducting private hearing on which charges against policeman were based held disqualified to hear charges (New York Supreme Court: *Reger v. Mulrooney*, 271 N. Y. Supp. 20).

War veteran suspended because position was abolished held not entitled to have non-veteran removed to create a vacancy for him (New York Court of Appeals: *Clancy v. Halleran*, 188 N. E. 746).

Trial of patrolman by Board held not unfair because City Attorney and Clerk of Board were present (New Jersey Supreme Court: *Brown v. Board of Fire and Police Commissioners, Paterson*, 169 Atl. 661).

Gambling

Permit to conduct "skill ball" game held properly revoked on ground game was one of chance (California District Court of Appeal: *Einig v. Board of Police Commissioners, Los Angeles*, 32 Pac. 2d, 1103).

Licenses

Four per cent gross income tax against telephone business upheld (United States Supreme Court: *Pacific Telephone & Telegraph Co. v. City of Seattle*, 54 Sup. Ct. 383).

Injunction held proper remedy to prevent wrongful revocation of license to conduct store (New Jersey Court of Chancery: *Drive-To Department Stores v. City of Newark*, 170 Atl. 29).

Ordinance licensing "transient" retail merchants held inapplicable to bakery salesman covering regular route (Pennsylvania Court of Quarter Sessions, Lehigh County: *Emaus v. Kinkle*, 25 Pa. Munic. Law Rep. 189).

Ordinance imposing 5 cent fee for every taxicab fare collected held violative of statute forbidding local taxation of motor vehicles (New York Supreme Court, New York County: *United Taxicab Board of Trade v. City of New York*, 270 N. Y. Supp. 263).

Two-hundred-dollar license fee imposed against solicitors of business for out-of-town cleaning plants held not void for unjust discrimination because local plants charged only $25 (Kentucky Court of Appeals: *Williams v. City of Bowling Green*, 70 S. W. 2d, 967).

Municipal Bonds

Water, sewer and street improvement bonds held "necessary expenses," within provision permitting taxation therefor without electoral assent (North Carolina Supreme Court: *Starmount Co. v. Town of Hamilton Lakes*, 171 S. E. 909).

Bonds to pay for equipment, etc., for CWA sewer project held issuable without referendum (Washington Supreme Court: *Dearling v. Funk*, 32 Pac. 2d, 548).

Town held powerless to remit penalties on delinquent street improvement assessments, to prejudice of holders of bonds (United States Circuit Court of Appeals, Tenth Circuit: *Brown-Crummer Investment Co. v. Paulter*, 70 Fed. 2d, 184).

Streets

County highway in territory annexed to city held to become street, and city was not liable to abutter for lowering grade (Kentucky Court of Appeals: *Lewis v. City of Whitesburg*, 69 S. W. 2d, 989).

Abutter held not entitled to recover from city for lowering of street grade (Texas Court of Civil Appeals: *City of Amarillo v. Hume*, 70 S. W. 2d. 651).

Unlighted concrete signal tower erected by railroad in village highway without legislative authority held a nuisance, rendering railroad company liable for motorist's collision with tower (New Jersey Court of Errors and Appeals: *Sammak v. Lehigh Valley Railroad Co.*, 172 Atl. 60).

Electric railway could be required to grade and pave intersection of street and right-of-way, although street was established after right-of-way (Virginia Supreme Court of Appeals: *Richmond-Ashland Railway Co. v. Commonwealth*, 173 S. E. 892).

City held entitled to extend Wilshire Boulevard across West Lake Park (California Supreme Court: *Spinks v. City of Los Angeles*, 31 Pac. 2d, 193).

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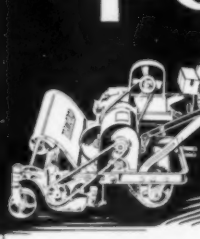

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The Challenge of Leisure.—By Arthur Newton Pack. The Macmillan Company, New York. 1934. 244 *pp.* $2.00.

Leisure is here presented not as the vacant time that is a mere by-product of economic conditions, but as a great opportunity for America, to be evaluated in terms of human welfare. If it is wisely directed, but left open for the free expression of the individual, it may be made to achieve new psychological standards of happy living, through a greatly expanded education program. Its activities may be developed in relation to agriculture, "the direct cooperation of man and soil"; in the use and enjoyment of the facilities of nature; in outdoor and indoor games and sports; in hobbies—the collecting and integrating of facts or objects, or the creation of things; in artistic, musical or literary occupations; or in expanding and strengthening human relationships, in the home and in the world. "Leisure is an indispensable part both of economics and of social existence," "the most important commodity that all our centuries of civilization have produced."

Accident Prevention

"How Safe Is Home?" is the title of a study by Howard Whipple Green, Secretary of the Cleveland Health Council, presenting in 49 mimeographed pages, with maps and charts, a detailed analysis of fatal home accidents in Cleveland, by age, sex, specific cause, and economic status, with the purpose of pointing the way to prevention. Organizations and individuals who are concerned with health and welfare problems will find this of interest. 50c. (Apply to Cleveland Health Council, 1900 Euclid Ave., Cleveland, Ohio.)

Civil Service

"A Bibliography of Civil Service and Personnel Administration" has been prepared by Sarah Greer, Librarian of the Institute of Public Administration, and has been published by McGraw-Hill Book Co., Inc., New York, for The Commission of Inquiry on Public Service Personnel. It is a companion volume to "A Bibliography of Public Administration," also prepared by Miss Greer, and recently issued by the Institute, and represents the next volume in the comprehensive bibliography which the Institute is presenting in sections. X + 143 pp. $2.00 from THE AMERICAN CITY.

Manhattan's Landed Wealth

The Golden Earth.—By Arthur Pound. The Macmillan Co., New York. 1935. 303 *pp.* $3.50 *from* THE AMERICAN CITY.

This might be described as a tale whose moral is on the surface, whose solution is still to be unearthed. The author has traced the story of the growth of land values in the city of New York up to 1934 from the days when "three or four hundred hungry Indians, who called themselves Manhattoes . . . sold their island to the Dutch West India Company for trade goods with twenty-four dollars." The scope and vigor of the narrative are indicated by such chapter headings as "First Deals in Golden Earth," "The Shell Game of Manhattan," "New York Becomes a City," "The Alchemist of Wall Street," "Broadway—Country Lane to White Way," "Fifth Avenue—Trade Pursues Fashion," "Oxcarts to Subways," "Trinity—Child of Empire," "The Astors Grow up with the Land," "Those Wierd Wendels."

THE AMERICAN CITY hopes to quote some characteristic passages from this book in an early issue. Meanwhile the volume is well worth buying and reading—even though Mr. Pound's purpose has been the telling of a picturesque narrative, rather than showing how to cure such economic maladjustments as he portrays when he says: "The golden earth of Manhattan has sprouted many a coronet. As the curate said at his lord's table, 'Blessed be rent.'"

Municipal Government

City Problems of 1934.—*Edited by Paul V. Betters; published by The United States Conference of Mayors, Chicago,* 1935: 90 *pp.*

These proceedings of the Conference of Mayors held in Chicago, November 22-24, 1934, open with the absorbing theme of municipal credit and tax collection, proceed through discussions of modern police work, unemployment relief, and public works, and close with three addresses on municipal progress. Mayor T. S. Walmsley of New Orleans, in his presidential address, asserts that new sources of revenue must be found, but that many improvements can be had at a saving by applying modern methods. City Chamberlain A. A. Berle, Jr., of New York, points out that sound debts must be backed by an equal amount of capital wealth. On the subject of modernizing the police, Mayor D. W. Hoan of Milwaukee stresses the importance of right recreation and education for the young. Honesty, intelligence and a knowledge of progress are of course the fundamentals of a good force—of any kind. Professor Charles E. Merriam, of the National Resources Board, emphasizes the need for people to get a vision of what the modern city can be. Mayor F. H. LaGuardia of New York points out the growing complexity and opportunity in municipal service.

Building Codes

An address on "Municipal Building Codes in New York State" was delivered by Elmer F. Andrews, Industrial Commissioner of the state, under the auspices of the New York State Conference of Mayors and Other Municipal Officials, on January 30, 1935, over radio station WGY and a NBC network. It has been released by the Labor Publications Editor of the State Department of Labor, in 6 mimeographed pages. The author sets forth the imperative need for honesty in building, maintained and promoted by mandatory building codes, and illustrates this by accounts of the collapse of buildings resulting in loss of many lives, and by the inadequate, ambiguous, and inconsistent provisions of existing building codes unearthed by the five license professional engineers and registered architects who are drafting the proposed code for the state. Lack of uniformity in the codes has added to the difficulty and cost of designing and constructing buildings. The advantages of the proposed code are clearly set forth. (Apply to the State Department of Labor, 80 Centre Street, New York.)

The American School and University

The new edition (1935) of this authoritative yearbook makes an instant appeal through the excellence of its appearance and the scope and variety of its contents. Now in its seventh year, it is recognized as presenting reliable, recent information on the design, construction, equipment, utilization and maintenance of educational buildings and grounds, from those who are actively engaged in these divisions of the field; and as furnishing what amounts to a public exhibit of the latest development in applicable manufactured products and essential services. The roster of well-established consultants—architects, and landscape architects, and the directories of college, university and normal school presidents, and superintendents of schools, also the list of aids which state departments of education furnish to local school boards, make definite points of contact for those who use the volume. The articles deal not only with the general topics outlined, but also with standards of planning and finance; with the traffic problems involved in relation to school buildings; with the planning and planting of grounds; with up-to-date arrangement and equipment for libraries, cafeterias, laboratories, shops, classrooms, dormitories, offices, nursery schools, and recreational facilities; with fire protection, proper lighting; with radio and talking pictures in the schools. 424 pp.; many illustrations. Price, $2.50. (Apply to the American School Publishing Corporation, 470 Fourth Ave., New York.)

Kansas State Police

State Police, Bulletin No. 101.—*By the League Municipalities, John G. Stutz, Executive Secretary, Lawrence, Kans.* 47 *pp.* $2.50.

This is a summary study of the state police organizations of 11 states having them, and their duties, together with information concerning partial state police in other states. It contains a copy of a proposal before the Legislative Council of the State of Kansas and the Tentative Draft of an Act Creating a Bureau of Criminal Indentification, Investigation, and Statistics prepared by a Committee on Uniform Crime by the International Association of Chiefs of Police. The study was prepared by a special committee of The League of Kansas Municipalities and submitted last August to the Legislative Council of the Kansas Legislature.

City Surveys

The Committee of the Surveying and Mapping Division on City Surveys, of the American Society of Civil Engineers, has compiled "Technical Procedure for City Surveys" in a pamphlet of 125 pages, as No. 10 of the Society's Manuals of Engineering Practice. It describes the various divisions of the standard form of procedure known as the City Survey. It is hoped that the Manual will find increasing use in the organization and training of engineers in the performance of such surveys as are here detailed, which have been spurred by the need of providing plans for the construction involved in Federal construction programs. 95c to members of the Society; $1.90 to non-members. (Apply to the Society, 33 W. 39th St., New York.)

Water Supply

"The Air-Dilution Method of Odor Determination in Water Analysis," by Gordon M. Fair and William F. Wells, Associate Professor of Sanitary Engineering, and Instructor in Sanitary Science, respectively, Harvard Engineering School and Harvard School of Public Health, has been reprinted from the November, 1934, issue of the *Journal* of the American Water Works Association, in a pamphlet of 8 pages, as No. 136 of the 1934-35 Publications of the Harvard Engineering School. 25c. (Apply to Harvard Engineering School, Cambridge, Mass.)

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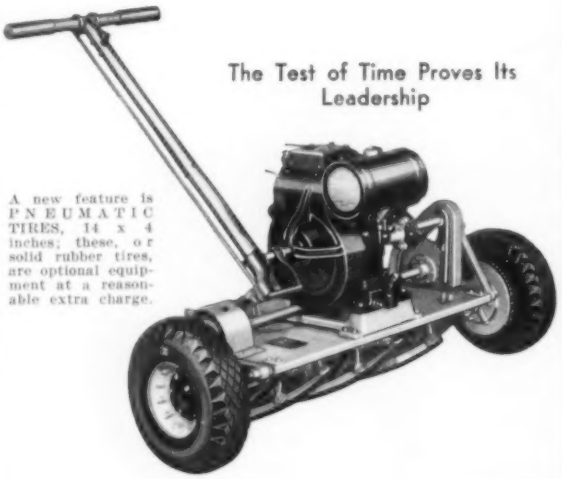

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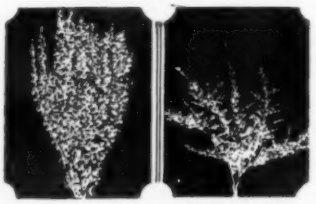

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Planning

Part II of the National Resources Board's comprehensive Report on National Planning and Public Works in Relation to Natural Resources, including Land Use and Water Resources, with Finding and Recommendations, contains the Report of the Land Planning Committee. The outline of the contents follows: Section I, Conditions and Tendencies Influencing Major Land Requirements—The Outlook for Population; The Outlook for Industrial Conditions and Employment; Relation of Mechanical Progress in Agriculture to Land Utilization and Land Policy. Section II, Land Requirements in Relation to Land Resources for the Nation as a Whole—Summary of the Present Uses of the Land Surface and of Prospective or Recommended Uses; Agricultural Land Requirements and Resources; Forest Land Requirements and Available Resources; Recreational Land Requirements; Land Requirements for Wildlife and Available Areas; Miscellaneous Requirements for Land (urban uses, highways and railroad rights-of-way, reservoirs). Section III, Maladjustments in Land Use and Proposed Lines of Action—Agricultural Land Use; The Problems of Range Land; Forest Land Problems and Policies; The Development of the Nation's Recreational Resources; Policies with Respect to Wildlife; Indian Land Problems and Policies; Policies with Respect to the Public Acquisition and Ownership of Land; A Program for Permanently Tax-Delinquent and Tax-Reverted Land; Requisite Procedure and Organization for the Development of a Unified Land Program. 163 quarto pp.; folding maps and others, photographs, charts, tables. 35c. (Apply to Superintendent of Documents, Washington, D. C.)

The Committee on Public Works Program of the New York State Planning Board has issued, in its Bulletin No. 18, a "Report on a Five-Year Construction Program." 15 mimeographed pp. The needs that are set forth, and the recommendations of the Committee cover chiefly the requirements of the several state departments, including institutions, armories, prisons, social welfare schools, highways, grade crossings, educational and public office buildings. No provision is made for reforestation, forest preserves or parks. (Apply to Frederick Stuart Greene, Chairman, Committee on Public Works Program, New York State Planning Board, 353 Broadway, Albany, N. Y.)

FERA

Rural Rehabilitation is issued by the Federal Emergency Relief Administration for the purpose indicated by its title. The second issue, which appeared February 15, 1935, contains 28 photo offset pages and presents much interesting illustrated material. This issue is dedicated especially to two propositions: planning by every Federal, state and county rehabilitation employee during the few remaining winter weeks for the largest possible number of individual rehabilitation clients, in order that they may not be forced to continue through another season without progress toward self-support; (2) testing such plans by a budget showing all essential expenditures for family living and farm operation, and prospective income from all possible sources—the basis for all sound operation. This bulletin is distributed through state relief administrations. (The address of the Federal Emergency Relief Administration is 1734 New York Ave., N. W., Washington, D. C.)

Architecture and Landscaping

An admirable study of "Economic and Social Values of Good Architecture and Landscaping" was presented by Dean Rexford Newcomb of the College of Fine and Applied Arts, of the University of Illinois, at the second annual Mineral Industries Conference—Home Building in Illinois, and was published by the Illinois State Geological Survey in 1934. The special application of the paper to the concerns of the Conference is in the matter of reduction of housing costs, through the collaborative effort of producers of raw materials, manufacturers, designers, constructors and home-makers, in order that the aims of the American home may be attained—the functional beauty that becomes an enriching spiritual force; land planning that becomes community planning and makes more readily available better and lower-priced houses for the great mass of the people. 16 pp. (Apply to the Illinois State Geological Survey, Urbana, Ill.)

Diversion of Highway Funds

"It's Up to You!" says Willard Chevalier, Vice-President of the McGraw-Hill Publishing Co., 330 W. 42d St., New York, in his appeal to the motorist to oppose the misuse of motor taxes. This is a strong argument in favor of the proposition that "Your motor taxes should come back to you—plus dividends." The essentiality of highway transportation; the threat of its breakdown; the need of highway jobs for the unemployed, to provide safe, economical facilities; the unfairness of diverting the license fee and the gas tax to general government costs; the great need of more and better roads, and of the elimination of traffic hazards; the importance of comprehensive and rational highway programs; the responsibility of the individual motorist;—these points are driven in with vigor. Illustrations in red and black and white help tremendously. 24 pp. (Copies may be secured from Mr. Chevalier.)

Taxation

The inequity of present taxes on heavy vehicles in New Jersey is set forth in the report, issued January, 1935, entitled "Motor Vehicle Taxation in New Jersey," prepared by William D. Ennis, Humphreys Professor, Stevens Institute of Technology. The report is addressed to the New Jersey Taxpayers Association, at the request of Associated Railroads of New Jersey. Cooperating with Professor Ennis, through separate reports, were Arthur Richards, S. A. Stephenson and others. Consideration of three main questions is involved in this study: (1) Do the motor vehicles as a whole pay as much as they should? (2) Is any particular group of motor vehicles underpaying and thus imposing a burden on other groups or on the public? (3) If such is the case, what amount should be paid by the groups of vehicles now favored? It is determined that: "The shortage of $18,000,000 in annual equitable contribution from motor vehicles should be made up from additional taxes and fees levied against those intrastate and interstate vehicles which weigh more than 7,000 pounds." 199 pp., including many tables and diagrams. (Apply to Stevens Institute of Technology, Castle Point, Hoboken, N. J.)

Government and Administration

Dallas, Texas, was the fourth largest American city to adopt the council-manager form of government, and in 1931 John N. Edy became City Manager. A clear, detailed account of governmental progress in Dallas during 3½ years is given in "Progress—An Official Report on Municipal Achievement." The presentation is most attractively prepared and is of great interest, from the point of view not only of worthwhile civic accomplishment, but also of excellence in municipal reporting. 34 quarto pp., illustrated. (Apply to the City Manager.)

Salaries

A report on "Restoration of City Pay Cuts" has been issued (December, 1934) as Report No. 103 of the American Municipal Association (Drexel Ave. and 58th St., Chicago, Ill.) An inquiry on this subject was sent to the cities of the United States that have over 50,000 population. The report summarizes the replies of 126 cities. Paul V. Betters, Executive Director of the Association, says, "It is believed the restoration of pay cuts by cities is an evidence of recovery, and the replies indicate the movement is gaining momentum." 5 mimeographed pp. plus 3 pp. of lists of Information Reports issued by the Association. 50c. (Apply to the Association.)

"Municipal Job Classification and Salary Standardization" is the title of a manual prepared by Theodore B. Forbes, as Publication No. 32 of the Bureau of Training and Research, New York State Conference of Mayors and Other Municipal Officials, Albany, N. Y. It sets forth procedure and practice on occupational classification and salary standardization for New York municipalities—a plan greatly needed in view of the confusion and inequalities that exist in the municipal service of the cities of the state. The classification plan recommended follows the general lines of the proposed Rochester plan. Standard terms are employed—usable and understandable. 63 mimeographed pp. $1.00. (Apply to the Bureau.)

Municipal Finance

The City Planning Board of Boston, Mass., issued in December, 1934, a "Report on the Income and Cost of Six Districts in the City of Boston." The areas selected for this study seem typical of large districts, and give together a fairly accurate cross-section of the city. The report presents a record for each district of the difference between the income to the city from taxes on the real estate, based on assessed values in 1933, and the total cost to the city for administration and public services reasonably chargeable to the district, according to the Auditor's report for 1933. The suburban and low rental districts show a deficit, while the business, industrial, high rental, and miscellaneous districts show a net return to the city over and above maintenance costs. The study was an emergency relief measure and was carried on under the direction of William Stanley Parker, Vice-Chairman of the City Planning Board, and Chairman of its Advisory Committee on Housing, assisted by Miss Elisabeth M. Herlihy, Secretary of both groups. 44 photo offset pp.; maps, charts. (Apply to Miss Herlihy.)

Public Utilities

"The Public Utility Franchise in Missouri." a study by J. Rhoads Foster, Ph.D., makes up the contents of the October 1, 1934, Quarterly of Research published by the University of Missouri, at Columbia, Mo. It covers the present extent of centralization or decentralization of public utility regulatory power and responsibility in the state, and shows whether the system conforms to the facts of utility organization and operation; considering especially the effectiveness of municipal control through short-term franchise or ordinance. After his careful analysis of the problem, the author concludes that there is not a clear case for exclusive control of the occupancy of the streets either by the Public Service Commission or by the municipality, and that expediency and the maintenance of a high standard of utility service are most important. He believes that the solution "may lie in the prohibition of the future grant of short-term franchises, authorization of indeterminate permits, in the absence of which the utility would operate under a certificate of convenience and necessity, and the requirement of Commission consent to all evictions except for purposes of purchase." 83 pp. $1.25 a copy. (Apply to the University.)

Traffic

The Regional Planning Commission of the County of Los Angeles recently issued a "Report of a Highway Traffic Survey in the County of Los Angeles." Aside from the presentation and analysis of the data obtained in the survey, and the specific findings and recommendations, this report shows definitely the value of determining the highways over which traffic is accustomed to travel and the relative loads on those highways, in order to program highway construction on a scientific basis. New routes can be opened, and existing ones widened when they are needed to forestall congestion. Improvement of existing highways that have ample rights-of-way and pavement for the present load may be delayed, and thus much money saved. By the traffic flow map it is possible to determine the economic desirability of eliminating bottle-necks, jogs, etc., from a direct route. The relation between traffic loads on the various highways gives a means of fair allocation of the gasoline tax. This report is a finished production of 32 quarto pages, and a number of folding maps. (Apply to the Commission, 205 S. Broadway, Los Angeles, Calif.)

Other Reports Received

CHICAGO, ILL.—The Annual Appropriation Bill of the City (passed January 4, 1935; as amended January 10, 1935.) 155 quarto pp. (Send 10c in stamps to Municipal Reference Library, City Hall.)

KENOSHA, WIS.—"Twelfth Annual Letter to Kenosha Citizens from Your City Council." December 14, 1934. 6-page folder.

PALO ALTO, CALIF.—Annual Report, Health Department, 1934. 24 pp.

WILMINGTON, DEL.—Annual Report, Chief Engineer of the Water Department, to the Board of Water Commissioners, 1933-34. 101 pp. plus inserts.

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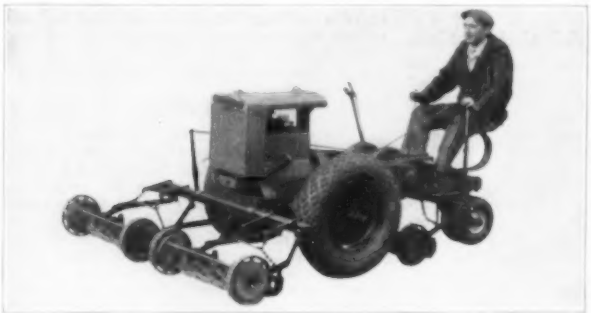

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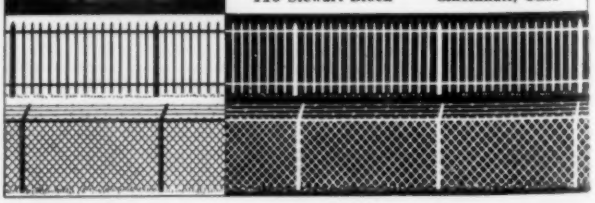


CONVENTIONS—WHEN AND WHERE

(Figures in parentheses following the name of the convention city indicate the estimated attendance other than local)

MARCH 7-8.—INDIANAPOLIS, IND. (100)
American Water Works Association—Indiana Section. Annual meeting. Secretary-Treasurer, B. H. Jeup, 201 State House Annex, Indianapolis, Ind.

MARCH 21-22.—ALBANY, N. Y.
American Water Works Association—New York Section. Spring meeting. (DeWitt Clinton Hotel.) Secretary, R. K. Blanchard, 50 West 50th Street, New York.

MARCH 21.—BOSTON, MASS.
New England Water Works Association. Meeting. (Hotel Statler.) Secretary, Frank J. Gifford, 715 Tremont Temple, Boston, Mass.

MARCH 21-22.—TRENTON, N. J. (300)
New Jersey Sewage Works Association. Annual meeting. (Stacy-Trent Hotel.) Secretary, John R. Downes, Bound Brook, N. J.

MARCH 27-29.—LONDON, ONT.
American Water Works Association—Canadian Section. Annual meeting. Secretary-Treasurer, Dr. A. E. Berry, Ontario Department of Health, Parliament Buildings, Toronto, 5, Ont.

MARCH 27-30.—WEST PALM BEACH, FLA.
American Water Works Association—Florida Section. Annual meeting in conjunction with University of Florida Short Course in Water Treatment. Secretary, Louva G. Lenert, Chief Engineer, State Board of Health, Jacksonville, Fla.

MARCH 29.—WASHINGTON, D. C. (50)
National Fire Waste Council. Semi-annual meeting. Manager, Terence F. Cuneen, Insurance Department, Chamber of Commerce of the United States, Washington, D. C.

APRIL 2-4.—BIRMINGHAM, ALA. (200)
American Water Works Association—Southeastern Section. Annual meeting. (Hotel Thomas Jefferson.) Secretary-Treasurer, W. H. Weir, 4 Capitol Square, S. W., Atlanta, Ga.

APRIL 2.—OCALA, FLA. (100)
Southern Commercial Secretaries' Association. Annual meeting. Secretary-Treasurer, Charles Ketchum, Greensboro, N. C.

APRIL 10-11.—SPRINGFIELD, ILL.
American Water Works Association—Illinois Section. Annual convention. (Hotel St. Nicholas.) Secretary-Treasurer, A. E. Skinner, Care the Pitometer Co., 5311 Kenmore Avenue, Chicago, Ill.

APRIL 11-12.—ATLANTIC CITY, N. J.
American Water Works Association—Four States Section. Annual meeting. Secretary-Treasurer, C. H. Becker, 400 Chestnut Street, Philadelphia, Pa.

APRIL 12-13.—HELENA, MONT. (75)
American Water Works Association—Montana Section. Annual meeting. Secretary, Herbert B. Foote, State Board of Health, Helena, Mont.

APRIL 25-26.—KANSAS CITY, MO.
Missouri Association of Public Utilities. Annual convention. (President Hotel.) Secretary, Jesse Blythe, 101 West High Street, Jefferson City, Mo.

APRIL 29-MAY 2.—WASHINGTON, D. C.
Chamber of Commerce of the United States of America. Annual meeting. Secretary, D. A. Skinner, 1615 H Street, N. W., Washington, D. C.

APRIL 29.—CAMBRIDGE, MASS. (100)
New England Sewage Work: Association. Spring meeting. Secretary, F. W. Gilcreas, Room 409, 14 Beacon Street, Boston, Mass.

MAY 2-3.—WASHINGTON, D. C. (500)
National Rivers and Harbors Congress. Annual congress. Secretary, Fred D. Beneke, 708 Earle Building, Washington, D. C.

MAY 2-3.—CENTRALIA, WASH.
Association of Washington Cities. Annual convention. Secretary, Russell W. Barthell, University of Washington, Seattle, Wash.

MAY 6-10.—CINCINNATI, OHIO.
American Water Works Association. Annual convention. (Hotel Netherland Plaza.) Secretary, Beekman C. Little, 29 West 39th Street, New York.

MAY 6-7.—BOSTON, MASS.
Massachusetts Safety Conference. Annual convention. (Hotel Statler.) Secretary, Lewis E. MacBrayne, 6 Beacon Street, Boston, Mass.

MAY 13-16.—ATLANTA, GA.
National Fire Protection Association. Annual convention. (Atlanta Biltmore Hotel.) Managing Director, Franklin H. Wentworth, 60 Batterymarch Street, Boston, Mass.

MAY 16-18.—LEWISTON, IDAHO.
American Water Works Association—Pacific Northwest Section. Annual meeting. Secretary, Ernest C. Willard, 720 Corbett Building, Portland, Ore.

MAY 16-17.—ANNAPOLIS, MD. (125)
Maryland-Delaware Water and Sewerage Association. Annual conference. Secretary, A. W. Blohm, 2411 North Charles Street, Baltimore, Md.

MAY 20-22.—WASHINGTON, D. C. (200)
American Federation of Arts. Annual convention. Secretary, George F. Zook, Barr Building, Farragut Square, Washington, D. C.

MAY 20-23.—NEW YORK. (900)
National Association of Purchasing Agents. Annual convention. (Waldorf-Astoria Hotel.) Secretary-Treasurer, G. A. Renard, 11 Park Place, New York.

MAY 20-22.—CINCINNATI, OHIO.
Joint Conference on Planning. American City Planning Institute. Secretary, Howard K. Menhinick, Robinson Hall Annex, Cambridge, Mass. *National Conference on City Planning.* Secretary, Flavel Shurtleff, 130 East 22d Street, New York. *American Society of Planning Officials.* Executive Director, Walter H. Blucher, 850 East 58th Street, Chicago, Ill. *American Civic Association.* Executive Secretary, Miss Harlean James, 901 Union Trust Building, Washington, D. C.

MAY 20-21.—HARRISBURG, PA. (100)
Pennsylvania Association of Planning Commissioners. Annual convention. Secretary-Treasurer, Arthur Cassell, City Planning Commission, Allentown, Pa.

MAY 21-24.—MILWAUKEE, WIS. (200)
American Institute of Architects. Annual convention. Executive Secretary, Edward C. Kemper, 1741 New York Avenue, Washington, D. C.

MAY 23-25.—WASHINGTON, D. C. (250)
American Association of Museums. Annual meeting. Director, Laurence Vail Coleman, Smithsonian Institute, Washington, D. C.

MAY 23.—NEW YORK CITY. (50)
National Board of Fire Underwriters. Annual meeting. General Manager, W. E. Mallalieu, 85 John Street, New York.

MAY 24-25.—POUGHKEEPSIE, N. Y.
New York State Sewage Works Association. Spring meeting. Secretary-Treasurer, A. S. Bedell, Albany, N. Y.

MAY 27-31.—INDIANAPOLIS, IND.
Building Officials' Conference. Annual convention. Secretary-Treasurer, William F. Hurd, Commissioner of Buildings, Indianapolis, Ind.

MAY 27-28.—ALLENTOWN, PA. (250)
Pennsylvania State Association of Township Commissioners. Annual convention. Secretary-Treasurer, H. A. Fritschman, Eagle and Darby Roads, Upper Darby, Pa.

JUNE 3-5.—SYRACUSE, N. Y.
Conference of Mayors and Other Municipial Officials of the State of New York. Annual meeting. Secretary, William P. Capes, City Hall, Albany, N. Y.

JUNE.—MONTREAL, QUE. (400)
Child Welfare League of America, Inc. Annual meeting. Executive Director, C. C. Carstens, 130 East 22d Street, New York.

JUNE 7-8.—MONTREAL, QUE. (500)
American Public Welfare Association. Annual conference. Director, Frank Bane, 850 East 58th Street, Chicago, Ill.

JUNE 9-15.—MONTREAL, QUE. (5,000)
National Conference of Social Work. Annual. General Secretary, Howard R. Knight, 82 North High Street, Columbus, Ohio.

JUNE 10-15.—LOS ANGELES, CALIF.
Institute of Government. Sixth annual session. Executive Secretary, Walter E. Sykes, 3551 University Avenue, Los Angeles, Calif.

JUNE 17-19.—AUSTIN, TEXAS. (300)
City Marshals and Chiefs of Police Union of Texas. Annual convention. Secretary, George A. Smith, P. O. Box 299, Dallas, Texas.

JUNE 23-30.—PRAGUE, CZECHOSLOVAKIA.
International Housing Association. Congress. General Secretary, Prof. Franz Schuster, Hansa-Allee 27, Frankfort a/M, Germany.

JUNE 24-28.—ITHACA, N. Y.
American Institute of Electrical Engineers. Annual summer convention. Secretary, H. H. Henline, 33 West 39th Street, New York.

JUNE 24-29.—DENVER, COLO.
American Library Association. Annual conference. Secretary, Carl H. Milam, 520 North Michigan Avenue, Chicago, Ill.

JUNE 24-28.—DETROIT, MICH.
American Society for Testing Materials. Annual meeting. (Book-Cadillac Hotel.) Secretary-Treasurer, C. L. Warwick, 260 South Broad Street, Philadelphia, Pa.

JUNE 24-29.—PARIS, FRANCE. (1,000)
International Chamber of Commerce. Biennial congress. Manager of the American Section, John P. Gregg, Connecticut Avenue and H Street, N. W., Washington, D. C.

JUNE 24-26.—STATE COLLEGE, PA. (150)
Pennsylvania Sewage Works Association. Annual conference. Secretary, L. D. Matter, Kirby Health Center, Wilkes-Barre, Pa.

JUNE 25-27.—NEW BEDFORD, MASS.
New England Association of Fire Chiefs. Annual convention. (Hotel New Bedford.) Secretary-Treasurer, John W. O'Hearn, 99 Main Street, Watertown, Mass.

JUNE 26-28.—STATE COLLEGE, PA.
Pennsylvania Water Works Operators' Association. Annual convention. Secretary-Treasurer, I. M. Glace, 506 South Office Building, State Capitol, Harrisburg, Pa.

JULY 16-20.—LONDON, ENGLAND.
International Federation for Housing and Town Planning. Congress. Organizing Secretary, H. Chapman, 25 Bedford Row, London, W. C. 1, England.

AUGUST 22-23.—PITTSBURGH, PA.
American Water Works Association—Central States Section. Annual convention. Secretary, H. L. Nelson, 2435 Koppers Building, Pittsburgh, Pa.

AUGUST 28-30.—PHILADELPHIA, PA.
National Shade Tree Conference. Annual convention. Secretary-Treasurer, Dr. R. P. White, N. J. Agricultural Experiment Station, New Brunswick, N. J.

SEPTEMBER 19-20.—KENOSHA, WIS. (600)
League of Wisconsin Municipalities. Annual convention. Secretary, Frederick MacMillin, 114 North Carroll Street, Madison, Wis.

OCTOBER 14-17.—HOUSTON, TEXAS.
Southwest Water Works Association. Annual convention. Secretary-Treasurer, Lewis A. Quigley, Fort Worth, Texas.

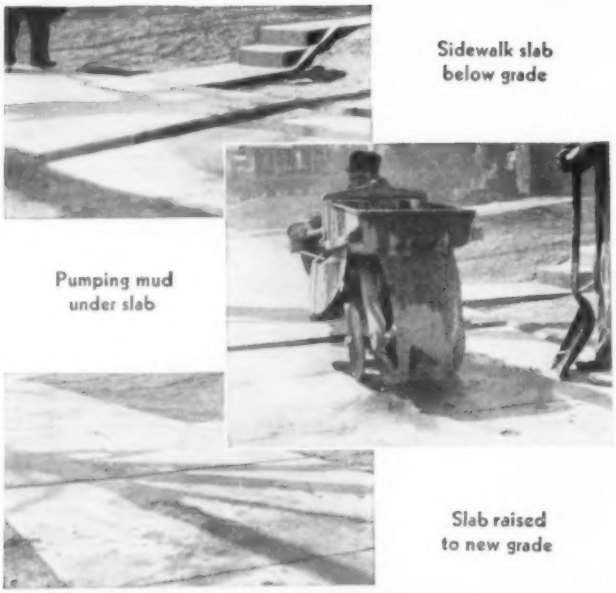
OCTOBER, THIRD WEEK OF. (TENTATIVE.)—ATLANTIC CITY, N. J.
Pennsylvania Water Works Association. Annual meeting. (Haddon Hall.) Secretary, Dr. F. Herbert Snow, 327 Telegraph Building, Harrisburg, Pa.

OCTOBER 23-26.—SAN DIEGO, CALIF.
American Water Works Association—California Section. Annual convention. Secretary-Treasurer, J. E. Phillips, 207 South Broadway, Los Angeles, Calif.

NOVEMBER 6-8.—DES MOINES, IOWA.
American Water Works Association—Missouri Valley Section. Annual meeting. Secretary, Earl L. Waterman, University of Iowa, Iowa City, Iowa.

DECEMBER 2-6.—NEW YORK CITY. (2,000)
American Society of Mechanical Engineers. Annual meeting. Secretary, C. W. Rice, 29 West 39th Street, New York.

MUD-JACK METHOD



Sidewalk slab below grade

Pumping mud under slab

Slab raised to new grade

Sidewalk Subgrade Reconstructed

This sidewalk slab was raised approximately 3½ inches to a new grade by the N. E. C. Mud-Jack in less than twenty minutes. New adjoining walk was laid at a higher level, making it necessary to correct grade of old walk. The Mud-Jack Method solves problems of this kind quickly and economically without the usual cost and time-consuming reconstruction activities.

Write for Mud-Jack Bulletin AC

KOEHRING COMPANY

Milwaukee Wisconsin

For Raising Concrete Curb, Gutter, Walks, Street

GET A BETTER JOB AT LESS COST

With Hotstuf

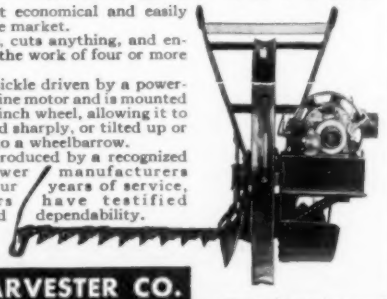
WRITE US FOR BULLETINS

MAINTENANCE EQUIPMENT
ASPHALT HEATERS
TOOL & SURFACE HEATERS
WEED BURNERS
TRAILER TOOL BOXES FOR SERVICE DEPARTMENTS

MOHAWK ASPHALT HEATER CO.
Frankfort New York

Cut Mowing Costs . . . *with a* DETROIT MOTOR SCYTHE

● Here is the most economical and easily handled cutter on the market.
● It goes anywhere, cuts anything, and enables one man to do the work of four or more with hand scythes.
● It has a 36-inch sickle driven by a powerful one-cylinder gasoline motor and is mounted on a free running 30-inch wheel, allowing it to be backed up, pivoted sharply, or tilted up or down slopes similar to a wheelbarrow.
● It is now being produced by a recognized leader among mower manufacturers and during over four years of service, thousands of users have testified to its economy and dependability.



DETROIT HARVESTER CO.
5450 W. JEFFERSON AVE., DETROIT, MICH.

Write for prices and Bulletin No. 10

Pierce Power Rollers
for Street and Park Maintenance

Cities all over the United States and Canada are using Pierce Rollers for light construction work and for maintenance of streets and alleys. These Rollers are also ideal for leveling drives in parks and for rolling park lawns. They offer the most practical means of keeping tennis courts, playgrounds, race tracks, athletic fields and airports in proper condition.

Built in three serviceable models: ¾, 1½-2, and 3-ton. You save money when you buy Pierce Rollers. Write for information.

The Pierce Governor Company
Anderson, Indiana

NEWS AND ILLUSTRATIONS

Items of Interest to City, Town and County Officials, and Others Concerned with the Economical Construction and Efficient Operation of Public Improvement Undertakings

A Combination Sewage Aeration and Settling Tank

A combination aerator and settling tank which permits the application of the activated sludge process of sewage treatment to small plants without loss of efficiency has been announced by the Lakeside Engineering Corporation, 222 West Adams Street, Chicago, Ill. Its construction makes the treatment of sewage for this process as economical of power as in the larger installations.

The settling tank is placed in the aeration compartment, and sludge discharge is drawn back into the aeration tank by the suction created by the aerating unit. This allows the use of a plain settling tank, eliminating the use of a sludge return pump, and more or less automatically provides for the proper sludge return.

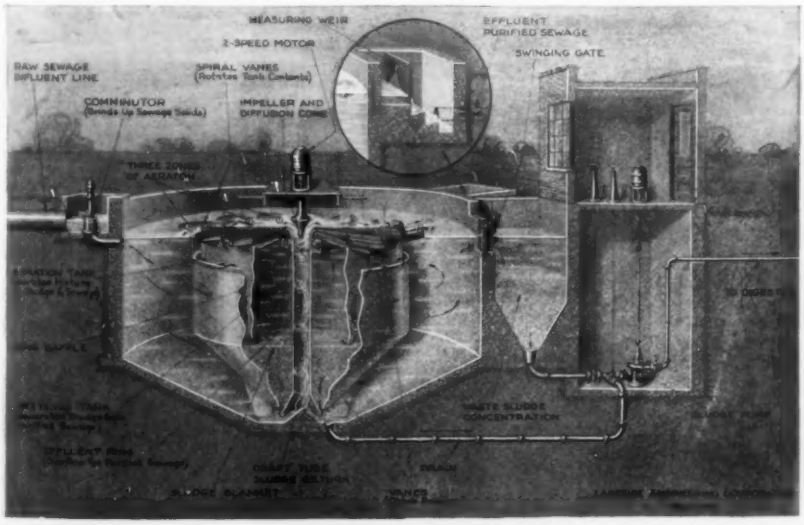
The plant consists of a circular tank with a shallow hopper bottom in which is built a settling tank with a somewhat more steeply sloped bottom. In the middle of the structure is a draft tube which permits the mixed sludge and sewage to be drawn to the top of the tank. Here it is thrown against a splash plate which also acts as a tight cover for the settling tank. The sewage enters the tank at the outside wall, where it is immediately mixed with the activated sludge. When it emerges from the top of the draft tube, the aerating unit throws it into the air in a spray, absorbing enough oxygen to maintain the process.

The mixture of activated sludge and sewage circulates in the aeration tank and is gradually forced toward the center of the structure and finally enters the sedimentation tank. The point of entry is an annular space between the outside wall of the sedimentation tank and a baffle set inside it. The mixed sludge and sewage flows downward through this space to the point where the hopper bottom begins. Here the separation of the sludge and clarified effluent takes place. The sludge sinks through the bottom of the hopper or cone, assisted to a great extent by the suction existing at the mouth of the draft tube, and is there returned again to the aerating tank.

The accumulation of sludge must be periodically withdrawn, or it will soon choke the whole apparatus. For the purpose of wasting this surplus activated sludge, a separate sludge concentration tank is provided outside but immediately adjacent to the aerating tank. This sludge tank communicates with the aerating tank through a wide-swung gate extending about one foot below the water level. When this gate is open, the sludge in the aerating mixture finds its way into the sludge tank. As this is quiescent, the sludge falls to the bottom and concentrates. When the sludge tank is full, the concentrated sludge is pumped to a sludge digestion tank or other sludge disposal apparatus.

Emergency Carbide Light Always Ready for Use

A new carbide emergency light weighing only 38 pounds when fully charged, which burns for three hours, giving 8,000 candlepower, has recently been announced by the National Carbide Sales Corporation, Lincoln Building, New York. Announced as a police emergency light, it has many other applications in the municipal, aviation and construction fields.



THE LAKESIDE AERATOR AND SETTLING TANK FOR SMALL SEWAGE TREATMENT PLANTS

POLICE EMERGENCY LIGHT

The reflector is mounted on a universal swing joint, so that the light may be shifted to any angle and may be easily folded down for carrying by a convenient handle above the carbide hopper. The unit is 4 feet high when extended for use, and 3 feet when folded.

A 1¾-pound charge of carbide placed in the hopper is sufficient for over 3 hours. The light may be operated intermittently, as needed, without the waste of any of the charges. By throwing a lever, the carbide is released a few grains at a time into the water tank below, and then the rate of feed of the dry carbide is regulated automatically by the gas pressure. The light may be shut off by throwing the lever back to locked position. There is no spilling if the light is turned over, since it will operate again as soon as righted. The tank is made of 18-gage sheet steel, hot-dipped in lead after the tank is welded.

Mathieson Moves Executive Offices

The Mathieson Alkali Works, Inc., has announced the removal of its executive offices from 250 Park Avenue to 60 East 42nd Street, New York.

Rome Graders Taken Over by New Corporation

The Rome Road Grader business, formerly owned by the Rome Manufacturing Co., Division of Revere Copper and Brass, Inc., Rome, N. Y., has been purchased by a group headed by J. M. Patterson, who previously managed this department for Revere. A new company has been formed under the name Rome Grader and Machinery Corporation, Rome, N. Y., to take over this business.

The new organization plans to be in production about the middle of March with a full line of Rome high-lift drawn graders, Rome motor graders, and Rome auto mowers, and will later add more items of road-building equipment.

Littleford Model "M" Pressure Distributor applying surface coat on an Oklahoma highway. This low-cost Distributor is made in sizes from 300 to 1000 gallons.

What You Need, We've Got!

Whether you have large or small surfacing jobs, long hauls or short hauls, heavy penetration type asphalt or light road oil—we have an outfit particularly suitable for your work.

Take the machine shown above—our Model "M" Distributor. It is a low-cost machine that handles road oils, emulsions and cut back in fine style.

Then there is Model "C" Distributor—our pride and joy. It handles any kind of bituminous material, will load or empty itself at the rate of 250 G.P.M., thaw out working parts in five minutes and be ready to apply material in half an hour. That is absolute fact!

If you have skin or penetration patch work to do, there is no quicker way than to put a Littleford Tar & Asphalt Kettle on the job. Equip it with a Littleford Hand or Motor Spray Attachment and you have a complete maintenance unit.

Write for full information covering our entire line of Road Equipment. We'll gladly send it without obligating you.

LITTLEFORD

Road Maintenance Equipment

SINCE 1900

LITTLEFORD BROS. 500 E. PEARL ST. CINCINNATI, O.

"HVASS"

SPREADERS

Conquer Slippery Pavements

Spread full width street or road at one time or any part thereof.

—SPREAD—
SAND, ASHES OR CINDERS

Can be quickly attached or detached.

Write for descriptive bulletin.

CHAS. HVASS & CO., Inc. 508 East 19th Street, New York City

Complete assortment of general line of nursery products. Also large specimens of shade and ornamental trees and shrubs.

BIG TREES MOVED AND GUARANTEED

Consultations and Inquiries Invited

THE GREENING NURSERY CO.

MONROE - - - - MICHIGAN

Born 1850 - - - - - Still Growing

"People come—People go—and always come back!"

to the New

FRANCIS DRAKE

A GRAND HOTEL

There is something about the FRANCIS DRAKE—once a guest always a guest. Next time you are in Minneapolis, you too, ought to enjoy that something. It doesn't cost any more. Just come once and you'll always come back to the grand hotel in Minneapolis.

THE NEWEST IN MINNEAPOLIS

RATES:

Single $2.00 and up—
Double $1.00 and up.

ALL ROOMS WITH BATH

A New Compression-Type Fire Hydrant

It is of prime importance that a hydrant valve should operate freely at all times. Frequently great difficulty is experienced in opening hydrant valves, particularly after long periods of inactivity. In the Western fire hydrant, built by the Western Gas Construction division of the Koppers Construction Co., Fort Wayne, Ind., a ball thrust bearing is provided to insure ease in opening. The operating unit is removed from the water zone, and provision is made for the lubrication of the operating spool, stem threads, and ball thrust bearing, through the operating spool, eliminating the corrosion or freezing of the threads. Openings in the base of the bonnet provide drainage of the bonnet chamber in case of leakage at the gland while the hydrant is in use.

A SECTION OF THE WESTERN FIRE HYDRANT

In case the hydrant is broken, the compression type valve is held against its seat by the water pressure in the mains, thus preventing flooding. The streamlining of the nozzles and valve entrance chamber, and the large diameter valve opening and standpipe, reduce friction losses through the hydrant to a minimum.

The Western fire hydrant is built in strict accordance with American Water Works Association specifications for 150 pounds per square inch water-works pressure and a test pressure of 300 pounds per square inch. Positive drainage has been provided by nine drain openings of ample size around the outside of the stationary seat ring. The seat ring is of bronze, so there is no chance of corrosion at the drain opening. The first turn of the operating spool in opening the hydrant valve closes the drip ring. In closing the hydrant the drip is not uncovered until the valve is almost seated, preventing waste of water.

Better Concrete for Water Tanks and Reservoirs

The Hewett System of construction of reservoirs, standpipes and tanks for the storage of water, U. S. Patent No. 1413405, is a system of combining concrete and steel in such a way as to avoid concrete shrinkage, temperature stresses, etc., and produce an economical, watertight structure. This method of construction has been in use since 1922 and many such structures of considerable size and importance have been built.

In the construction of large reservoirs a common design is cantilever walls of concrete backed with earth fill, with roof and floor of flat slab and column construction. Such reservoirs are usually covered with 1½ to 2 feet of earth in cold climates. This method of design is not economical in small units, according to William F. Hewett, originator of the William F. Hewett System, 549 West Washington Street, Chicago, Ill., for small units and additions can not be made economically. It is therefore necessary, if this style of construction is used, to anticipate the requirements of the city for several years in advance. It is also very difficult to make and keep a large structure of reinforced concrete watertight. Such structures are often several hundred feet square and when it is realized that shrinkage and change of temperature will change the linear dimensions of concrete about ¾-inch per 100 feet of length, the difficulty of keeping such a structure watertight is self-evident. Past experience with such structures indicates that many of them will require repairs after a few years. When the repairs are in progress the city is deprived of a large part of its reservoir capacity. Smaller units built under the Hewett System, with concrete dome roofs covered with earth if desired, are claimed to reduce the total cost, the initial investment is less, watertight structures are obtained, there is no expense for repairs, and if it is necessary to empty the unit for cleaning, only a small part of the reservoir capacity is affected.

Meter and Valve Companies Move District Office

The Pittsburgh Equitable Meter Co., and its subsidiary, Merco Nordstrom Valve Co., Pittsburgh, Pa., have announced a change of address for their Kansas City, Mo., district office. The new headquarters will be at 1805 Bryant Building, where C. R. Zeskey is District Manager.

These two companies have also announced the appointment of Paul C. Kreuch as District Manager of its Chicago Office. He fills the vacancy made by the transfer of George W. Bailey to the main offices in Pittsburgh to act as National Representative. Mr. Kreuch has had many years of executive and sales experience on Pittsburgh water meters and Nordstrom lubricated plug valves. He comes to Chicago from the Oakland, Calif., factory of these companies.

In his new position he will be in charge of sales for the district, embracing the states of Michigan, Illinois, Indiana, Wisconsin and Minnesota.

Installing Water Services with a Pipe Pusher

A combination pipe puller and pusher which has two separate gripping devices which automatically grip and release the pipe has been announced by the Farnan Brass Works Co., 1104 Center Street, Cleveland, Ohio. One set of gripping devices moves forward gripped to the pipe as the other is moved back to a new hold, giving a continuous movement of the pipe regardless of the direction in which the handle is moved. The machine can be used with only one jaw at a time or with both together.

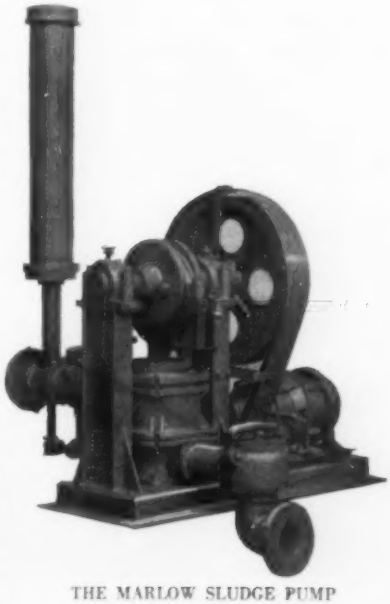
With this Trojan machine any length of pipe can be pulled without changing as the pipe travels continuously. As a pusher the machine will force new pipe underground in a straight line, making possible the installation of a new service without digging the entire trench.

The machine is so designed that one man with a 5- or 6-foot lever can exert all the pressure necessary to operate it and by moving the lever backward and forward a continuous movement of the pipe or push rod is created at the rate of about 2 feet per minute. The machine is only 10 inches high, 11 inches wide, and weighs 60 pounds.

Plunger Type Sludge Pump

The improvements made in the last few years in "geared head" motors, which permit the principal speed reduction to be taken care of in the motor itself, while still retaining the flexibility and safety of the V drive belt, has been taken advantage of in the Marlow "RPE" plunger sludge pump made by Marlow Pumps, Ridgewood, N. J. This unit is made only in the "Simplex" pattern, weighs only 1,230 pounds, has one plunger, operates at 3,150 U. S. gallons per hour with a maximum displacement of 4,200 gallons per hour, and has a maximum suction lift of 20 feet and a maximum discharge head of 20 feet. It is operated by a 3-horsepower electric motor. All pipe connections are 4-inch.

The stuffing-box is separate from the pump body, the pump body is separate from the valve chambers, and the valve chambers can be readily adjusted to suit different conditions. The patented valve chambers use large balls which pass rags, strings, hair, etc., without clogging and may be readily opened without tools for inspection, or for the removal of sticks and other large solids.



THE MARLOW SLUDGE PUMP

No matter where the figures fall

the community PAYS for Good Street Lighting whether it gets it or not

You can't alter facts or figures . . .

Accidents result in a definite economic loss. Some, less fortunate souls, pay with their lives. Others pay through taxes, insurance and medical expense.

The close relationship between the cost of street lighting and the cost of night traffic accidents is dramatically portrayed by a recent survey by the National Bureau of Casualty and Surety Underwriters. This survey reveals that cities with the lowest per capita street lighting cost have the highest night fatality rate per 100,000 population . . . *and vice versa!*

For instance, this survey considered both winter and summer night accidents so that factors other than visibility would not over-influence the results. In 1932 with a per capita street lighting cost of $1.09 the excess economic loss per capita was $0.93. While in 1933, when per capita street lighting cost was reduced to $0.93 the economic loss per capita increased to $1.07. In other words . . . *the community pays for good street lighting whether it gets it or not!*

Westinghouse, largest maker of complete lighting equipment, provides a complete line of street lighting equipment unsurpassed in durability and efficiency. Westinghouse also maintains an advisory staff of skilled street lighting engineers who are always at your service. For complete details write, Westinghouse Electric & Mfg. Co., Lighting Division, Edgewater Park, Cleveland, Ohio.

WHEN YOU THINK OF *Lighting* THINK OF

Westinghouse

Outdoor Lighting

A Section of *The American City*
Devoted to the Lighting of Streets, Highways, Bridges, Airports, Athletic Fields and Parks, and the Floodlighting of Public Buildings

Sodium Lamps at Pompton Lakes, N. J., Forecast Highway Safety

OF the half-dozen or so highway installations of sodium-vapor lamps, the recent one at Pompton Lakes, N. J., is by far the most ambitious, attractive and instructive. Its formal opening by Mayor Harry Babcock and the local Chamber of Commerce on the night of February 5 was attended by some 150 municipal officials, highway engineers, and others interested in outdoor lighting.

The purpose of this noteworthy demonstration is to show public officials what can be done and what the future may hold toward making the highway safer and, if the price is paid, to make it as safe by night as by day, and also and at the same time to advertise and sell the township, county and eventually the state to motorists and citizens through a new standard of lighting that is "different," safer, and cheaper per lumen.

There are two stretches of sodium-vapor-lighted highway of approximately 3,500 feet each, equipped respectively with 4,000- and 6,000-lumen lamps. The poles are spaced 115 feet apart along one side of the 2-lane concrete highway, and the lamps are mounted at 30 feet. Alternate lamps may be extinguished, so that the illumination effect of double spacings or 230 feet may be observed. Provision has been made for lowering the fixtures to any elevation desired, even to the ground for servicing and relamping. Thus the installations can be adjusted as to spacing and height. Two combinations were demonstrated on February 5 on both the 4,000- and the 6,000-lumen sections.

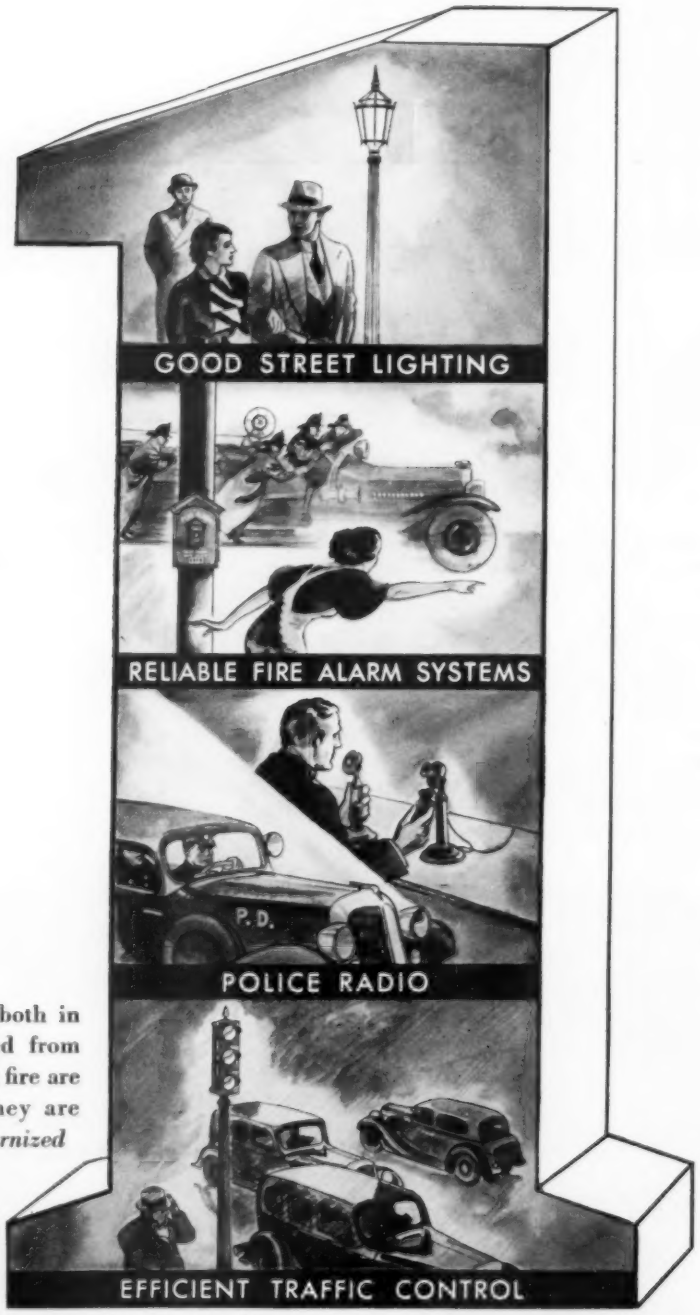
One was the full gala system, all lamps in service, mounted at 30 feet and spaced 115 feet.

The second arrangement was with every other lamp extinguished and the spacing thus 230 feet, and the mounting height 22 feet.

The outstanding contrast was between the 4,000-lumen section and the 6,000-lumen section. The former, entered and passed through first, was very satisfactory lighting, even with 230-foot spacing. But the latter was—and the word is used advisedly—peculiarly visible. So clear and unshadowed was it, that one could

USING 6,000-LUMEN SODIUM-VAPOR LAMPS IN "BUTTERFLY" FIXTURES 115 FEET APART AND 30 FEET UP

The public safety...FIRST!



THE tremendous losses both in life and property suffered from traffic accidents, crime and fire are arousing the public. They are demanding effective, *modernized* protection...electrical protection. Good street lighting, for example. It combats crime...accidents. Boosts business... Reliable and adequate fire alarm equipment...Police radio to speed up the long arm of the law...Efficient traffic control to reduce costly and dangerous traffic congestion...The logical source for this equipment is Graybar. Graybar offers not only a complete line of equipment, but also expert and experienced advice on how to use it most effectively. Write for information.

GraybaR

OFFICES IN 76 PRINCIPAL CITIES
EXECUTIVE OFFICES: GRAYBAR BLDG., N.Y.

Distributed and guaranteed by GraybaR

readily understand the assertion of A. J. Sweet, of the Westinghouse Lamp Co., that with these 6,000-lumen lamps, 22 to the mile, a highway is as safe by night as by day.

Whether or not the sodium-vapor lamp will meet with widespread acceptance, the facts are that the manufacturers from laboratory to sales department believe in it, the visibility is really excellent, and about three times the light is produced for the same money that now buys illumination with Mazda lamps. In fact, it is a quantity light, designed to reduce accidents and increase safety, within the financial means of public bodies.

The new "butterfly" fixture used at Pompton Lakes distributes the light downward and along the highway. "From a standpoint of engineering design,"

SODIUM-LAMP FIXTURE AT IMPORTANT INSTALLATION AT POMPTON LAKES, N. J.

said Samuel G. Hibben, director of applied lighting, Westinghouse Lamp Co., "these new fixtures are perhaps the outstanding feature of the Pompton Lakes installation." Six vanes of special sheet aluminum are arranged in an X-shape with two vanes forming a covering against weather. The two sides of the fixture, which appear to be two single vanes slightly angled in the middle and which give a wing appearance, are set parallel to the sides of the roadway. The lamp is placed vertically and base up in between these sides. The side and top vanes are polished inside, for reflecting. The bottom and two ends of the fixture are open to provide the downward and longitudinal distribution of the light. No light can escape from the fixture, and this feature of design is expected to find its way into street-lighting practice, since it will minimize the stray beams that enter the second-story windows of homes.

A Water-Wheel Plant Lights Street Lamps

By EDWARD E. SHELDON
President, Utilities Engineering Co., Inc., Albany, N. Y.

THE beautiful little village of Argyle, in Washington County, N. Y., has a population of only 216, is six miles from the railroad, and has its own street-lighting plant. The features of special interest are not only the small size of the plant and its restricted load of 30 lamps, but that it has utilized a local water resource and is a hydraulic plant and remarkably economical.

In 1917 the newly elected President of the village, Miss Lillian C. Barkley, determined to have modern electric street lighting and began a study of the problem, finally calling a mass meeting to discuss the subject. Many methods were suggested, such as a gasoline-engine-driven plant, a farm lighting plant with its usual storage batteries; but finally the Utilities Engineering Co. was engaged to make a survey and to report.

In 1910 the village had installed a modern water-supply system with Summit Lake as its source. Investigation showed that there was an adequate supply of water at sufficient head to furnish power for the necessary street lighting, and in 1918 a system based on this source of supply was installed.

The streets, lighted with 30 standard 6.6-ampere 1,000-lumen series lamps, are heavily shaded with overhanging elms, and it was felt that poles would be objectionable. Hence, the reflectors and wires were supported over the center of the street on span cables attached to the trees on either side. The photograph shows the situation.

A 5-hp Pelton water motor, operating under 75 pounds pressure and piped to the water main, was belted to a Crocker-Wheeler 4½-kw d-c 240-volt generator. As the load is practically constant, no governing equipment was installed, but an over-speed trip mechanism is used, so designed that when a predetermined excess speed is reached, the throttle valve is automatically closed. A stream of water only ⅝-inch in diameter is necessary to operate this plant to full capacity.

A most interesting feature of the plant is the means of closing the circuit when lamps burn out. They are protected by film cut-outs just as are other standard series street-lighting circuits, except that the films are thinner and puncture at lower voltage. When a lamp fails, the circuit is opened, the speed quickly increases and with it the voltage until the film punctures. If, however, the circuit

WIRE AND LAMP SUSPENDED BETWEEN TREES, ARGYLE, N. Y.

opens either by the time switch which is used to shut the plant down at a predetermined time or by a broken conductor, the speed continues to increase until the over-speed trip device closes the throttle, and the plant is shut down. It is entirely automatic in its operation after it has been started, at dusk.

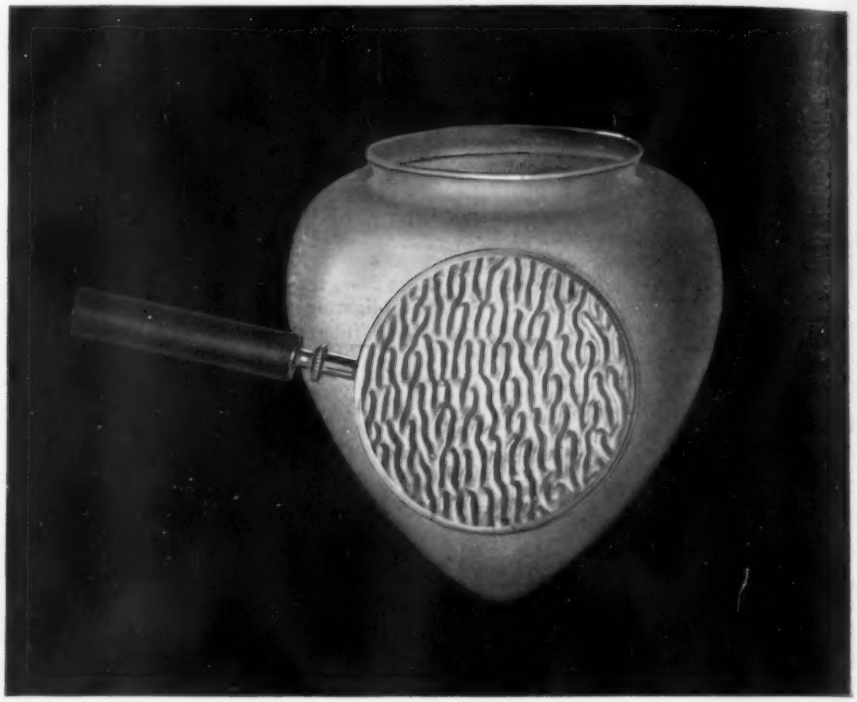
The plant has been in operation 16 years, during which time the system has failed only twice and then for only a few hours, once when a steam shovel became entangled with an electric conductor, and once during a severe ice and sleet storm which broke down some of the electric wires.

The total cost of the plant, generating unit, control and distribution system was $3,000. During the 16 years it has operated, the total annual expense, maintenance and repair has never exceeded $50; often it has been only the cost of lamp renewals.

Series-Lighting Test Set

A new portable Novalux current-testing set has been developed by the General Electric Co. to assist in maintaining rated light output and life of series lamps. It is especially adapted for automatically operated constant-current transformer circuits.

INSIST ON GOOD STREET-LIGHTING GLASSWARE



GLEASON-TIEBOUT GLASSWARE GIVES PLEASING, SPARKLING LIGHT WITHOUT GLARE

EACH street light in your city is a good investment, both for the city and for your administration. Well-lighted streets discourage crime and prevent accidents. The records of safety that these lights make are records that build good will for every city official as well as for every city.

A Gleason-Tiebout No. 162 rippled globe—made especially for use with a light shield

The satisfaction that a street-lighting installation brings depends to a great extent upon the type of glassware used. Gleason-Tiebout *rippled* glassware gives a pleasing, sparkling light without glare. And the arrangement of the ripples is such that rain will leave the globe with a clean rather than a streaked appearance.

Gleason-Tiebout glassware is scientifically made to meet the exacting specifications of General Electric engineers. These engineers will be glad to assist you in planning installations that will meet every requirement.

YOU PAY FOR GOOD STREET LIGHTING WHETHER YOU HAVE IT OR NOT

GLEASON-TIEBOUT GLASS COMPANY

GT-33.

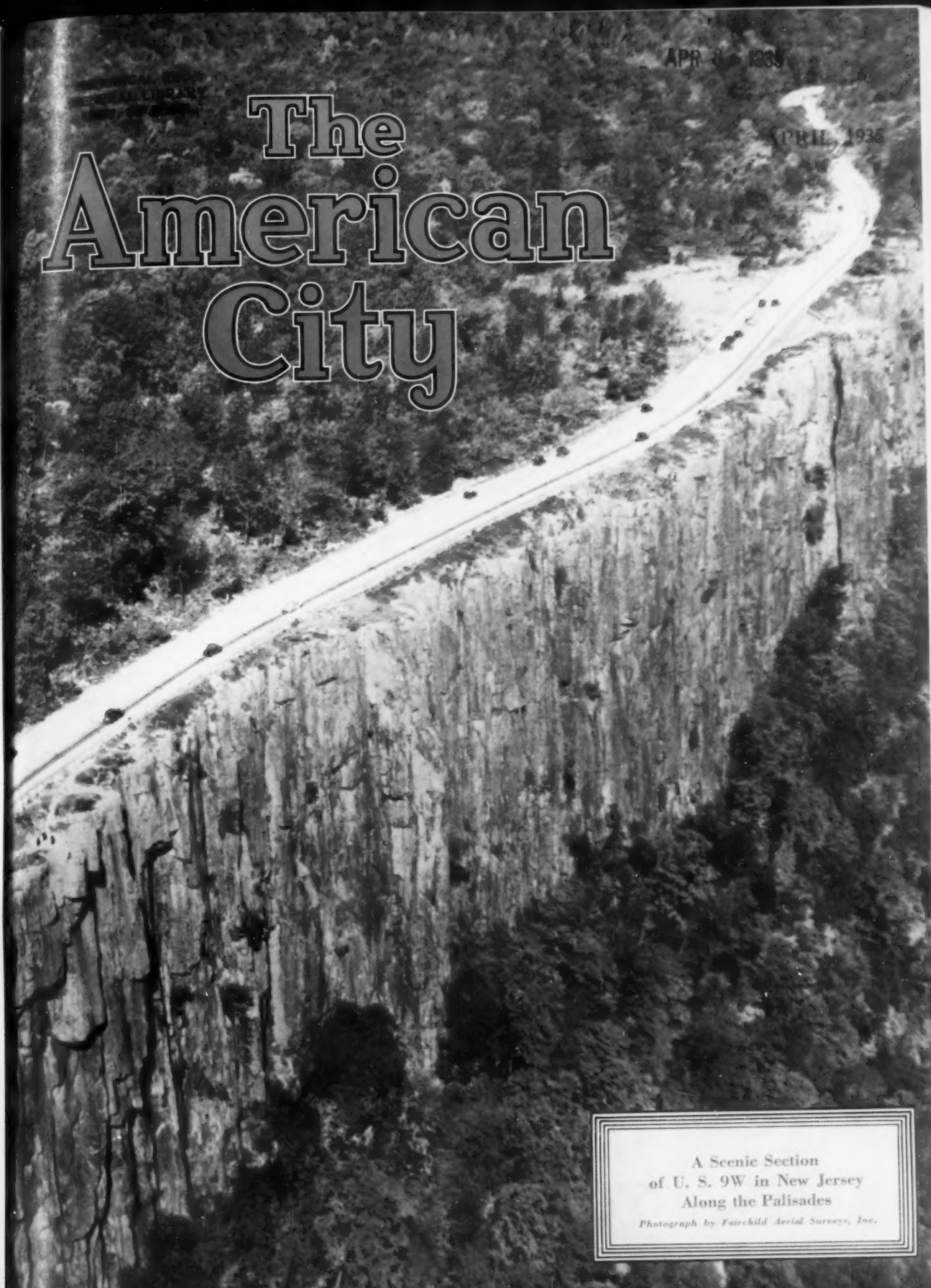
99 COMMERCIAL STREET, BROOKLYN, N. Y.

During March we hope you will remember to mention THE AMERICAN CITY

APR 8 1935

APRIL, 1935

The American City



A Scenic Section
of U. S. 9W in New Jersey
Along the Palisades

Photograph by Fairchild Aerial Surveys, Inc.